

E R R A T A

Page 2 - last paragraph - first line

For "British" insert "Swaziland Baphalali"

Page 8 - paragraph six - second line

For "recommended" insert "recommenced"

Page 30 - paragraph seven - fifth line

For "Stokoto" insert "Sidvokodvo"

Page 39 - paragraph two - second line

For "stolls" insert "stools"

Page 40 - last paragraph - third line

For "susgar" insert "sugar"

Page 46 - Hospital Staff List

For "nuses" insert "nurses"

Page 58 - paragraph three - second line

Insert "of one hundred and" between  
"out" and "fifty"



SWAZILAND  
ANNUAL MEDICAL AND SANITARY REPORT  
1971

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## I N T R O D U C T I O N

Swaziland has an area of 17,400 square kilometers and is bordered on the north, west and south by the Transvaal, and on the east by Mocambique and Zululand.

The country is geographically divided into four well defined regions, running from north to south, namely the mountainous highveld in the west with an altitude of 3,500 to 5,000 feet, the middleveld with an average altitude of 2,000 feet; and the lowveld or bushveld with an altitude of 1,000 to 300 feet; and the Lubombo Plateau on the east, with an altitude of 2,000 feet. Scenically the country is one of the more attractive parts of Africa. The highveld has a temperate climate and frosts occur during winter. The climate of the middleveld is subtropical, although every few years a frost does occur.

Rainfall, which occurs chiefly in the summer, varies between approximately 30" and 50" a year. Drizzle and mists are frequent in the highveld areas. The country is well watered by numerous perennial streams and rivers, some of which are of a considerable size and now provide water for three large irrigation schemes, which have been established at Mhlume in the north-east, at Big Bend in the east (at both of which sugar is grown) and at Malkerns in the centre of Swaziland (which produces rice, sub-tropical fruit and citrus).

In addition to the irrigation schemes, other important agricultural activities are cattle ranching and seed cotton production in the bushveld and sub-tropical fruit, maize and rice production in the middleveld, in the southern portion of which a considerable amount of tobacco is also grown. In the mining field, Havelock Mine in the north-west is a most important producer of asbestos, and with the opening of the railway in November, 1964 connecting Swaziland with Lourenco Marques, the mining of iron ore at Ngwenya and of coal at Mpaka got underway. A pulp mill and a sawmill are operating at two of the forestry concerns in the highveld. Cotton ginnery, meat canning factory and breweries now operate at Matsapha Industrial Area.

A census of the total population was held in May, 1966. This was the first census of all the people in Swaziland.

The figures are as follows:-

Africans	362,367
Europeans	7,987
Othe Non Africans	<u>4,217</u>
	<u>374,571</u>

One half of the area of the country is in communal ownership of the Swazi Nation and the remainder owned by individual tenure farmers. The Swazi have the exclusive use of the communal tenure areas and the remainder is open to farmers of all races without discrimination. Swazi dwellings for the most part consist of wattle-and-daub structures, or bee-hive huts, and small family collections of these huts are widely dispersed. Other than in the neighbourhood of the larger towns, there are no villages. Whilst concentrated on the raising of cattle and goats and the cultivation of maize, the work of the Ministry of Agriculture is now producing results, and both the standard and scope of Swazi farming are improving year by year.



The following hospitals exist:-

A. Run by Government:

Mbabane	300 beds
Hlatikulu	172 beds
Pigg's Peak	50 beds
Mankayane	41 beds
Matsapa (Tuberculosis)	200 beds
Nhlangano	15 heds
Matsapa Mental	200 beds
TOTAL :	<u>978</u>

B. Rub by Missions:

Raleigh Fitkin Memorial,	
Manzini	322 beds
Good Shepherd, Siteki	100 beds

C. Run by Industry:

Havelock Mine Hospital	70 beds
------------------------	---------

D. Run Privately:

St. Michael's Clinic	23 beds
TOTAL :	<u><u>1493</u></u>

Apart from these formal hospitals there are clinics run by industrial concerns at Mhlume, Tshaneni and Big Bend which can accommodate up to about 20 patients each.

The rural areas are catered for by 60 clinics staffed by trained nurses, 26 of them being conducted by Missions, 23 by Government and 11 by Industry and other organizations.

There were 55 doctors and 4 dental surgeions in the Country in 1971. Of the 55 doctors, 22 were in Government Service, 7 in Mission hospitals, 11 in Industry and 15 in private practive. Of the 22 doctors in Government service, two are Korean Doctors seconded by the South Korean Government under the Technical Assistance programme. The U.S. Peace Corps physician Dr. John Cole left in August and his successor Dr. Kramf, Radiologist, took his place. The Peace Corps doctors are a bonus to the hospitals as their main task is to look after Peace Corps volunteers. However they donate at least half their time to working in the hospitals.

Dr. James Lee, U.S. Peace Corps Ophthalmologist joined the Ministry in September on a full time basis. His duties were to operate on a large backlog of eye cases collected by the Royal Commonwealth society for the Blind Mobile Clinic and secondly, to revise and improve on, if possible, the valuable work rendered by the Mobile Clinic.

The Mbuluzi Leper Hospital, situated 10 miles from Mbabane and run by the Nazarene Mission, with the assistance of a Government grant, copes most adequately with the small number of lepers in the country.

The British Red Cross Society is successfully running Infant Welfare Clinics at Mbabane, Hlatikulu, Stegi, Pigg's Peak, Manzini, Kwaluseni, Mhlambanyathi and Nhlangano at which most useful work is being done. The Save the Children Fund has expanded its school feeding scheme to include 211 schools at which 29,000 children receive one substantial meal a day at a cost of one to two cents per day.





The Public Health Services of the country are centred at the Health Office in Manzini for the control of Malaria and Bilharzia. The National Tuberculosis Control centre and the Central Public Health Laboratory are also situated at Manzini. Urban Public Health Centres which are staffed by the Public Health Nursing Unit and which undertake maternal and child welfare service, immunization programmes, nutrition clinics and Health Education, are located at Mbabane, Manzini and Hlatikulu.

The Medical Association of Swaziland whose members include private practitioners, medical missionaries and Government medical officers, hold quarterly meetings, which are well supported and which make up to some extent for the lack of professional contact so common in territories such as Swaziland.

The training of nurses in Swaziland is carried out at the Ainsworth Dickson Training College attached to the Raleigh Fitkin Memorial Hospital, Manzini, where training for the Nurses Examination Board of Botswana, Lesotho and Swaziland qualifications in General Nursing, lasting four years, and in Midwifery, lasting one year, is given. The Ainsworth Dickson Training College can at present train sufficient nurses for the needs of Swaziland. Dispensers are trained at the Central Medical Stores. Laboratory Assistants are trained at the Central/Public Health Laboratory by a W.H.O. Laboratory Technician.



C H A P T E R I

REVIEW OF THE YEAR'S WORK

The Ministry of Health has undergone considerable expansion since Independence on a number of fronts and has become one of the biggest Ministries in the Swaziland Government and employs 720 people.

1. STAFF:

The establishment has increased from 512 in 1967 to 720 in 1971. There are 226 nurses employed, the majority of whom are Registered nurses. Almost 100% of the nurses are qualified in General Nursing and in midwifery.

The Ministry has continued to carry out Government's policy of localization and in 1971 all non professional posts were filled by local citizens. Only 3% of the total establishment are non locals and of the 24 expatriates, 13 are doctors. The other non locals are all professionals and include pharmacists, laboratory technologists, health inspectors, a physiotherapist and radiographers.

The Minister for Health Dr. A. Nxumalo M.H.A. became Minister for Health and Education in July 1971.

Dr. W. Wieland left in March. Dr. Burdon joined the staff in April and was stationed at Mbabane Hospital. He was later appointed Prisons and clinics medical officer in place of Dr. M. Dober who was transferred to Mbabane Hospital. Dr. Joseph Nxumalo left the staff of Hlatikulu Hospital in order to specialize in Surgery in Canada. Mr. G. Gibbon, Pharmacist, was designated a Fellow of the Pharmaceutical Society in November. This was indeed an honour for an employee of the Government but well deserved by Mr. Gibbon who had rendered many years of valuable work to Swaziland.

Miss Dorothy Davis, Sister Tutor at the Nurses training college at the R.F.M. Hospital in Manzini left Swaziland on retirement in December. She first came to Swaziland in 1940 and has been responsible for the training of the vast majority of nurses currently employed in Swaziland, a rare distinction indeed! She was a member of the Swaziland Nursing Council and the Nurses Examination Board of Botswana, Lesotho and Swaziland. Her place has been taken by Sister Phyllis McNeil.

Matron Priscilla Mdiniso was promoted in November to the post of Matron in Chief. She is the first person to hold this post in Swaziland.

There were 22 medical students undergoing training in various countries during the year. Three local doctors were specializing as follows:- 1 in Obstetrics and Gynaecology in Uganda, 1 in Public Health in Israel and 1 in Surgery in Canada. 9 students were studying medicine in Lourenco Marques, 4 in Zambia, 1 in Uganda, 1 in the United Kingdom, 2 in Tanzania, 1 in India and 1 in South Africa. Most of the students are expected to complete their studies in 1976.

Other Trainees include, two laboratory technicians in Kenya, 1 pharmacist in the United States of America and 1 physiotherapist in the Republic of South Africa.







The establishment has increased to 720, the new posts approved this year being:-

1 Health Inspector	H.4/3
1 Chief Matron	N.1
1 Matron Grade II	N.3
3 Nursing Sisters	N.4
12 Staff Nurses	N.5
1 Catering Officer	G.5/4
1 Orthopaedic Technician	H.8/6
1 Orthopaedic Assistant	H.12/10
1 Dental Mechanic	H.8/6
1 Visual Aid Assistant	H.12/10
2 Clerical Officers	G.8/7
30 Other officers	

#### Staff Changes:

Dr. P. Mokhobo was promoted to Specialist Physician  
 Dr. P.A. Kennedy was promoted to Specialist Paediatrician  
 Dr. P.J. Burdon was appointed as Medical Officer and posted to Manzini as Medical Officer (Prisons)  
 Dr. M.H. Dober was transferred to Mbabane Hospital  
 Dr. E.V. Blekie completed her contract in August and returned to South Africa.  
 Dr. M.E. Hague-Moss resigned her temporary appointment as a Medical Officer  
 Mr. Gideon T. Nyase was appointed Laboratory Technician and posted to Hlatikulu Hospital  
 Mr. E. Matolo was appointed Health Inspector and posted to Big Bend.  
 Mr. E.S. Magubane, Health Inspector, completed his contract and has taken up a new appointment with the Ministry of Agriculture  
 Miss Sue Evans - I.V.S. Physiotherapist left end of January 1971.  
 Miss A. Mosley was appointed Physiotherapist and posted to Mbabane Hospital.  
 Mr. J.N. Hertslet, Senior Accountant completed his contract and left Government Service.  
 Mr. P.O. Mbhamali was transferred to the Ministry and promoted to Senior Accountant in place of Mr. Hertslet.  
 Miss A. Cole, Personal Assistant Grade I, completed her contract and left the service.  
 Mrs. V.T. Maseko, Personal Assistant Grade I transferred from Department of Establishments and Training to replace Miss Cole  
 Mrs. A. Dlamini was promoted to Matron Grade II.  
 Mrs. Virginia Tembe.  
 Mrs. Agnes Magagula  
 Mrs Joyce Mamba  
 Mrs Agatha Mgulwa  
 Mrs Abigail Hlope  
 Mrs Maggie Makhubu were all promoted to Nursing Sister with effect from 1.10.71.  
 Mrs. M. Mamba, Accounts Officer, resigned after years service  
 Mr. P.R. Mtembu, Clerical Officer resigned after 25 years service.



Obituary:

Mrs. M.C. Africa Staff Nurse	17.11.71
Mrs. Lillian Myeni Staff Nurse	15.2.71
Mr. Phillip Msibi Ambulance Driver	15.8.71
Mr. Zeblon Dube Health Assistant	18.3.71
Mr. Joseph Hlope Orderly	3.3.71
Mr. Johannes Shabangu Orderly	14.3.71

The Ministry of Health is grateful for continued technical assistance from the following agencies:-

5 South Africa - Anglo American Korea	Panel of Specialists 1 Surgeon Specialist 1 Medical Specialist
United States - Peace Corps	1 Ophthalmologist 1 Part time Medical Officer at Mbabane Hospital 2 Peace Corps Workers employed in the Blood Transfusion Unit respectively
United Kingdom O.D.A.	1 Hospital Administrator (SCAAP)
World Health Organisation	1 Laboratory Technician at Central Public Health Laboratory

The Panel of Visiting Specialists from South Africa continue to visit Mbabane and Hlatikulu Hospitals, at regular intervals on a Pro Deo basis. They perform major operations, advise incumbent staff and help to raise the standards of medical care generally. The Panel consists of a Pathologist, Gynaecologist, Urologist, Thoracic Surgeon, E.N.T. Surgeon, Orthopaedic Surgeon, Paediatrician, Plastic Surgeon, Anaesthetist, General Surgeon, Dermatologist and Psychiatrist.

A number of medical students from Medical Schools visited Swaziland and worked in the bigger hospitals during their vacations, also on a voluntary basis. Their presence relieved the hard pressed medical staff of some of their burdens and the students were welcome. Some of the students come from as far afield as the United States for their elective period.

A S.C.A.A.P. Officer was sent to Swaziland to train local personnel in hospital administration and to introduce a uniform system of administration within the hospitals and institutions of the Ministry of Health. His services have been invaluable and his secondment has been extended for a further period of a year.

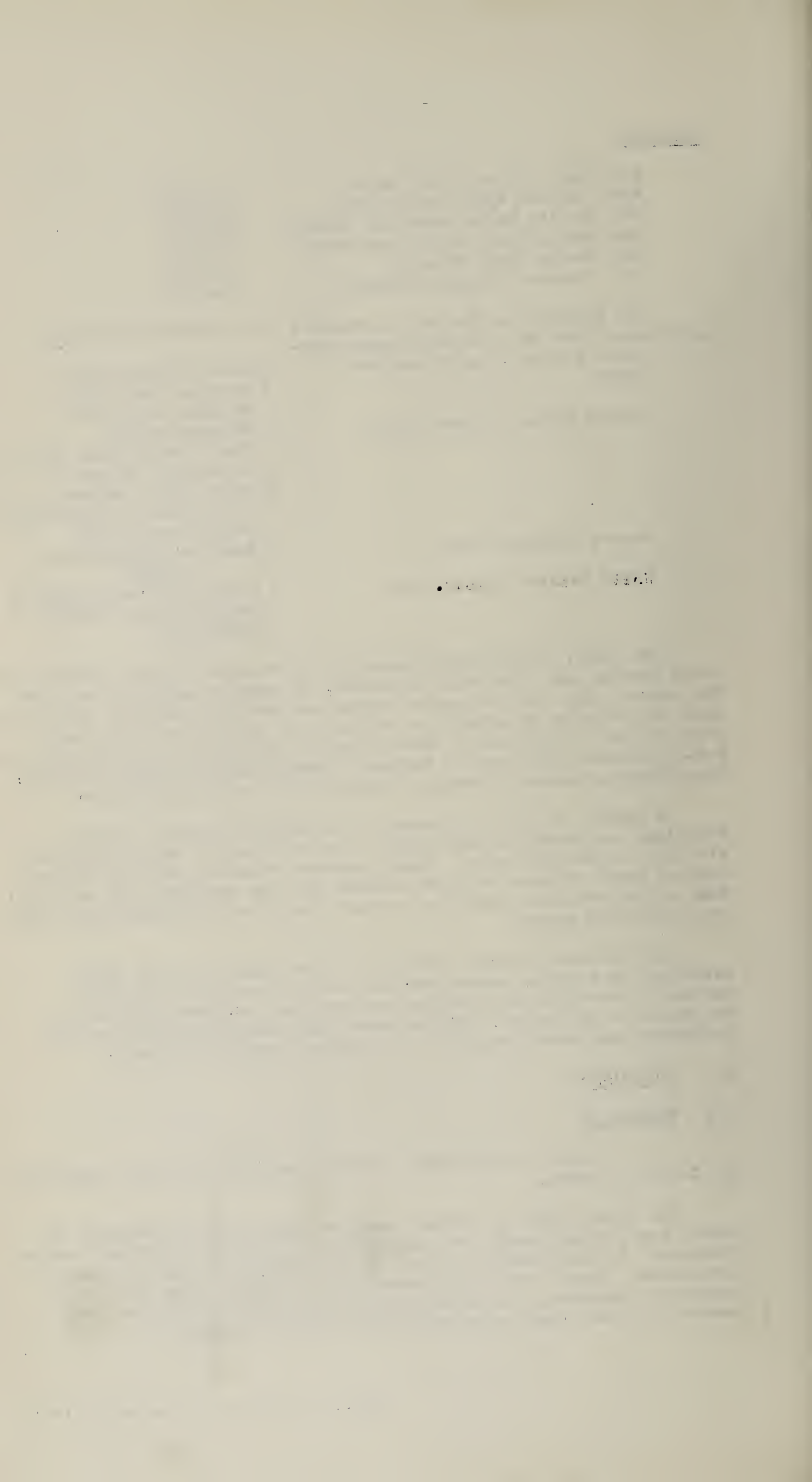
2. BUILDINGS:

(i) Hospitals:

A number of buildings reached completion or near completion at the end of 1971.

The Nurses Home at Mbabane Hospital which will accommodate 40 nurses was all but ready for occupation and only the finishing touches remained. It was built at a cost of some R47,000 by United Kingdom loan funds. Nurses will be accommodated in single rooms with well appointed furniture. In addition they will have a large spacious common room and lounge with small kitchenette attached.





After a long delay work was recommended on the redecoration of the ground floor at Mbabane Hospital. As a result of the renovations to the ground floor, the hospital has not been able to reach its full capacity of 360 beds. At present only 300 beds are in use and the demands for beds remains acute.

At Hlatikulu hospital the building of a large new laundry was started and almost completed by the end of the year.

The second phase of the development programme at Pigg's Peak hospital viz., the X-Ray Block and theatre suite was nearing completion and should be ready for use early in 1972.

The Sick Bay, Treatment Room and Laundry at the Matsapha Mental Hospital was completed and only the equipment remained to be installed.

The Good Shepherd Mission Hospital at Siteki opened a new childrens and maternity ward in August. The wards were opened by the Hon. Minister for Health, Dr. A. Nxumalo, and the bed capacity of the hospital was increased from 67 to 100 beds. Further expansion is planned to increase the number of beds to 120.

(ii) Rural Clinics:

Five new rural clinics were opened during the year thus bringing the total number of government owned rural clinics to 23. Bholi clinic was taken over from the Methodist Church in April; Bulandzeni which was built by the local community was opened in August; the J.C.I. buildings were donated by H.M. the King and opened in September as was the Oxfam built clinic of Ntshaneni in early September. Mathanjeni, the other Oxfam donation, was opened early in December. The delay in opening the last two Oxfam Clinics was due to a lack of adequate water supplies.

3. The National Blood Transfusion Service:

Commencement of the National Blood Transfusion Service marked another milestone in the development of health services in Swaziland. It can be looked upon as a tremendous achievement because it culminated five years of planning in which many agencies were involved, notably Oxfam, Baphalali Red Cross, the South African Blood Transfusion Services, the Swaziland Medical Association and the U.S. Peace Corps. Blood transfusion services are taken for granted in developed countries but the establishment of such a service in a developing country can be viewed with pride.

Oxfam donated R35,000 worth of equipment to set up a Blood Bank which started in a small side laboratory at Mbabane Hospital. The U.S. Peace Corps provided a volunteer, Mr. Stephen Bennett, to administer the scheme and to launch it countrywide. Within months of the start of the service 80 pints of blood were being used weekly and plans were made to transfer the service to the Central Public Health Laboratory in Manzini. Building of extensions to accommodate the Blood Transfusion Services at the Central Laboratory were commenced in December.

4. Family Planning:

The United Nations Family Planning Association agreed, after undertaking a feasibility study in 1969 at the request of the Ministry of Health, to support family planning in Swaziland. The W.H.O. and U.N.I.C.E.F. are to act as the implementing agencies.

The assistance, given in dollars is as follows:-





	<u>1971</u>	<u>1972</u>	<u>1973</u>
2 Medical Doctors	60,000	60,000	60,000
1 Public Health Centre	32,000		
1 Rural Health Clinic	24,000		
1 Family Planning services	5,000	5,000	5,000
Vehicles	12,000		
Education Materials	2,500	2,500	2,500
Fellowships	4,600	4,600	4,600
TOTAL	<u>140,100</u>	<u>72,100</u>	<u>72,100</u>

It is worth noting that it will be a three year programme after which it will become a government undertaking; that capital works for the programme include the construction of an urban health centre at Siteki as well as the erection of one rural health clinic; and that fellowships for the training of local counterparts are also included. W.H.O. and U.N.I.C.E.F. officials visited the Ministry during the year to discuss the finding and implementation of the project. However, despite an eagerness on the part of the Ministry to start family planning as soon as possible and despite a more than adequate existing infrastructure to implement the scheme delays have been experienced in recruiting W.H.O. doctors and in receiving U.N.I.C.E.F. supplies. It appears therefore that a start to family planning will now only be made in 1972.

#### 5. Measles and Polio Immunization:

After the successful Swaziland Baphalali Red Cross and Ministry of Health Measles and polio immunization scheme, a lapse occurred in the maintainance phase due to lack of funds to purchase the necessary vaccine. Negotiations with Oxfam were successfully concluded whereby Oxfam agreed to supply £1100 worth of vaccine which arrived in December. The maintainance phase of measles and polio-myelitis innoculation should commence early in the new year.

#### 6. The Royal Commonwealth Society for the Blind Mobile Clinic

After being involved in an accident and off the road for sometime, the Mobile Eye Clinic recommended its work in February and continued to perform an invaluable service in the treatment of eye diseases and the detection of blindness. During the year 8,810 patients had been examined, and 942 treated for a variety of eye diseases. 81 cases were operated upon for the restoration of sight and 22 cases were operated upon for the prevention of blindness. There were 9 other surgical eye cases for miscellaneous pathology.

Dr. James Lee, U.S. Peace Corps Ophthalmologist was appointed to the Ministry in September with a view to supervise the work of the clinic and to operate on the many cases of blindness discovered by the Eye Clinic. His task was to evaluate the services being rendered and if necessary, improve on it. Miss Charlene Cleaver, also a Peace Corps volunteer, joined Dr. Lee to assist in the administration of the clinic and to test the eyes of school children requiring spectacles.

#### 7. The Panel of Specialists of South Africa:

More commonly known as "Harry's Angels" and named after Mr. Harry Oppenheimer, Chairman of the Anglo American Corporatio,





continued to visit Swaziland monthly. The specialists visited Hlatikulu and Mbabane Hospitals throughout the year. In August two more open heart operations were performed at Mbabane Hospital by the Cardiac Team.

8. Conferences:

Two important conferences were attended during the year by the Hon. Minister for Health and his Senior Officials. The Pre-World Health Assembly was attended by the Minister and the Chief Medical Officer in Geneva in May and the Third Commonwealth Medical Conference was attended by the Hon. Minister, the Permanent Secretary and the Chief Medical Officer in Mauritius in November.

In addition, the Hon. Minister was invited to chair the African Population Conference in Ghana in December. He was accompanied by Matron A. Dlamini.

9. V.I.P. Visit:

Dr. Alfred Quenum, Regional Director for the World Health Organization visited Swaziland from 17th October to 20th October. He was shown a number of health facilities in the country and was visibly impressed with the degree of integration of basic health services and the health infrastructure in Swaziland.

10. Airport Crash Action Committee:

This was formed in October and consists of Airport Officials, Police Officers, Ministry of Health Officials, Medical Officers, Mission hospital doctors and private practitioners.

The purpose of the Committee is to organize, mobilize and render medical services in the event of an air disaster occurring in Swaziland particularly at or near the Airport. The volume of air traffic at Matsapha Airport had increased considerably and bigger planes were being used.

The Medical Services felt the need for preparedness to deal with crash victims and emergencies arising after a disaster and which is so often characterized by chaos and a lack of direction and control. The Committee has drawn up a Modus Operandi by which it is planned to render medical aid promptly should an accident occur at the Airport.

11. Road Accidents:

100 people died on the roads in 1971. There were 1,388 accidents. While many of the old scourges of infectious and contagious diseases are slowly being overcome (there were only 16 cases of leprosy treated at the Leper Hospital during the year) new problems arise to harass the medical services. Blood Alcohol content analysis is undertaken at the Central Public Health Laboratory at the request of the police but this has not been the deterrent it was initially hoped it would be. Road accidents have become a major public health problem in recent years. Injuries as a result of accidents, makes added demands on the health services and prolonged stays in hospitals are not uncommon.

12. Donations:

The Ministry of Health continued to receive considerable aid during the year:-



<u>DONOR</u>	<u>ITEM</u>	<u>VALUE IN RANDS</u>
U.K. Government	Renovations to Hospitals and Clinics	326,183
U.N.I.C.E.F.	Equipment for Laboratories and Public Health Services	42,000
Anglo American Corporation	Equipment	5,000
OXFAM	Blood Transfusion services Equipment	35,000
OXFAM	Measles & Polio vaccine	1,883
Royal Commonwealth Society for the Blind	Mobile Eye Clinic	3,060
U.N.F.P.A	Family Planning Services	98,000
W.H.O/U.N.D.P.	Equipment, Supplies and Scholarships	35,000
Lions International	Equipment & Medicines	1½ tons.
		<u>R546,126</u>

On reviewing the work of the past year it will be seen that considerable progress has been made in a number of fronts. A number of schemes have been introduced with quiet efficiency and with little fanfare. The benefits to the people are incalculable. In 1970, with an estimated population of 405,000 there were over 500,000 attendances and reattendances at government and mission hospitals and clinics throughout the country. This is a clear indication of the utilization and acceptability of the health facilities provided in Swaziland.

In 1971 with an estimated population of 410,000, the total number of attendances and reattendances at all government and Mission hospitals and clinics, including the Health Centres, amounted to 761,298. This demonstrates not only increased acceptability of the health services provided throughout the Country, but also the additional work load placed on health personnel bearing in mind that the number of facilities have not increased substantially during the past year. It is unlikely that this trend will be reversed in the future. There is bound to be an increased strain on the health services as the population increases and the demands of the public become more sophisticated.

The Professional Health Administrations are singularly aware of the implications of these facts.

There is, inter alia, a need for the intonsification of the rural health programme, preventive health services, training of Medical and Paramedical personnel, redeployment of services and the greater utilization of auxillaries.

*J. M. L. Kloppe*  
(J. M. L. KLOPPER)

O.B.E., B.A., B.Sc., M.B. B.CH., D.P.H.  
CHIEF MEDICAL OFFICER





SCHOLARSHIPS, COURSES, SEMINARS

<u>NAME</u>	<u>COURSE</u>		<u>VENUE</u>
Mr. C.D. Nxumalo	Public Health Administration	Jan/ March	Kenya, Nigeria & Ghana
Mr. E.M. Dlamini Mr. T.P. Mkhonza	Anti Malaria Activities	Jan./ April	Lagos
Mrs. G. Abrahams	Ward Administration	July/ December	Australia
S/N Easter Maseko	Paediatric Nursing	1971	Baragwanath Hospital
S/N Doreen Twala	Orthopaedic Nursing	1971	Baragwanath Hospital
Dr. Z.M. Dlamini	National Health Planning	July/ August	Brazzaville
Mr. P. Mathews	Malaria Control	April/ May	Lagos
Miss Mkhonza Miss Thabede	Laboratory Technology " "	1971/ 1972	Kenya "
Sister E. Nxumalo) S/N P. Dlamini )	Orientation Course for Health Centre Superintendent	Sept./ Dec.	Lagos
Mr. C.D. Nxumalo	Community Water Supplies	April	Brazzaville
Mr. L. Mtetwa	Environmental Health	Sept./ Dec.	Lagos
Dr. G. Murphy	Health Education	June	Brazzaville
S/N Monica Twala	Orthopaedic Nursing	71/72	Canada
S/N Mirriam Khoza	Clinical Teaching & Ward Administration	71/72	"
S/N A.P. Magagula	"	"	"
S/N J.D. Zwane	Operating Theatre Techniques	"	"
S/N J. Dlamini	"	"	"
S/N A Mgulwa	Ward Administration	"	"
S/N A. Hlophe	"	"	"



OFFICIAL VISITORS

P. Hector-Schutz	Winthrop Research Laboratories
V. Pinto	W.H.O. Advisor - Sanitary Engineer
G.A. Gilman	Tropical Products Institute
F.C. Peers	I.A.R.C.
A. Chomo	World Food Programme
H.J. Alexander	Crown Agents
J. Paviot	W.H.O. T.B. Advisor
M. Dobes	U.N.I.C.E.F.
S.M. Shomari	"
B. Jones	"
D. Deleg	Embassy of Israel
His Ex. Da Cunha Matos	Portuguese Ambassador
Dr. Campelo de Andrada	Department of Health Mocambique
Dr. Santos Reis	Secretary for Health "
Dr. Ribeiro	Malariologist "
Mrs. M. Henry	Food and Agriculture Organization
J. Chadwick	Commonwealth Foundation
M. Morris	Crown Agents
Dr. L. Hitchmanora	Unitarian Services Committee of Camada
Senator & Mrs. C. Farley	Senator of States of Jersey
Dr. M. Evans	Deputy Medical Advisor, Ministry of Overseas Administration
DR. A. Berry	S.A.I.M.R.
Dr. P. Keen	"
Mr. J. Monros	World Rehabilitation Fund
His. Ex. J. Matsuo	Japanese Ambassa dor
Mr. N. Guan	S.A. National Council for the Deaf.
Prof E. Dennis	Sterling Winthrop U.S.A.
Dr. A. Quenum	Regional Director W.H.O.
Dr. C. Cywinski	W.H.O. Representative
Prof. C. Evans	Univ. of Illinois.





## C H A P T E R 11

### COMMUNICABLE DISEASES

#### TUBERCULOSIS

The country has a National Programme for the control of Tuberculosis. The Programme is integrated into its existing health services (viz. Hospitals, Clinics and General Practitioners). The direction and supervision of the Programme is carried out from the National Tuberculosis Control Centre which is a unit of the Ministry of Health.

Procedures for the discovery and treatment of patients with Tuberculosis are standardised throughout the country. Patients complaining of "chest symptoms" of at least 2 weeks duration have their sputum collected and sent to the Central Public Health Laboratory for examination for Tubercle Bacilli by Direct Microscopy and culture. Finding patients by means of Chest X-Ray is secondary in importance to the sputum examination method because X-Ray units are few in number and are situated in the hospitals, some industrial concerns and at the National T.B. Control Centre.

Bacteriological examination of sputum is a valid means of discovering Tuberculous patients since it has been shown that approximately 60% of the total population of the country use the Hospital out-patient's departments' and rural clinic facilities. (Cittone M. "Compendium of Statistical Tables" - W.H.O., Project Swaziland 002, 1969, p 5.)

#### Case Finding (See Table 1A and 1B)

1. The number of participating health agencies increased somewhat compared to 1970 and the number of "First Time" specimens examined increased by more than 1450. (9153 in 1970).
2. Of the 10,619 specimens 555 were found to be "positive" on direct microscopy which gives a "positivity" rate of 5.22%. This is slightly less than in 1970 (6.03 %).
3. In addition 257 specimens that were "negative" on direct microscopy were found to be "positive" on culture examination. This is somewhat more than in 1970 (232) and gives a "positivity" rate of 2.55% of all direct microscopy "negative" specimens.
4. The total number of cases (812) exceeded the number found in the previous year (784) but the excess was made up almost entirely by direct microscopy "negative" culture "positive" cases.
5. The Incidence remains much the same as in 1970. (2.14/1000 in respect of the Direct Microscopy "positive" patients and 3.05/1000 in respect of the total number of "cases".)
6. (See Table 1B). The number of X-Rays taken at the National T.B. Control Centre and the number referred from some hospitals and other agencies increased compared to 1970. The rate % of abnormal X-Rays was slightly less than in the previous year (25.7%).
7. (See Table 2). The number of "follow-up" sputum and X-Ray examinations are set out. These numbers do not represent patients since more than 1 follow-up sputum could have been collected from each patient concerned.





Treatment (See Table 3A)

Patients put onto treatment have been categorized according to the "severity" of their bacteriological status. This is a convenient but purely arbitrary division because the patient with the most highly "positive" sputum does not necessarily have the most extensive disease. Where initial X-Rays were taken, the presence or absence of cavities is also recorded.

From the Table it can be seen that most of the patients registered for treatment had sputum specimens loaded with bacilli; to some extent this represents patients arriving for diagnosis and treatment rather late in the course of the disease. Most examples of patients with X-Ray evidence of cavities occurred in this category. This supports the well-known finding that when there are cavities (suspicious of Tuberculosis) visible on X-Ray then the sputum is usually loaded with bacilli in an untreated patient.

There were no patients with normal X-Rays in this category (Direct Microscopy 4+ and 3+) or in the next category (Direct Microscopy 2+ and 1+). There was only one patient in the following category (Direct Microscopy "negative", culture 4+ and 3+) who had a normal chest X-Ray.

In the category Direct Microscopy "negative" culture 2+ and 1+ there were 17 patients with normal X-Ray Chests. The usual criterion for anti-tuberculosis treatment in this category was the presence of organisms that were Niacin Test "positive" (i.e. human as opposed to "opportunistic" mycobacteria.) The presence of a normal chest X-Ray did not discourage treatment of such patients.

Of the patients found to be sputum "negative" on Direct Microscopy and culture "negative" but whose X-Rays were suspicious of Tuberculosis, 11.8% had cavitated lesions. Had a more persistent attempt been made to collect sputa from these before treatment was commenced at least some of them would have been sputum "positive". The category as a whole includes patients of all ages. There were 5 patients in this category with histologically proven T.B. on pleural biopsy.

Patients in the category "~~tuberculin~~ positive" were children aged 5 years or less (with one exception) who had never been vaccinated previously with B.C.G. and who had a tuberculin test reaction of 10 mm or more of induration. In our country all such children receive at least 1 year of anti-tuberculosis treatment. Seventeen of these children had clear X-Ray chests.

Extrapulmonary Tuberculosis. (See Table 3B).

The most commonly occurring extrapulmonary forms of the disease was the Glandular form and the next in frequency was the spinal form: this pattern was the same in 1970. More patients with Glandular or Spinal Tuberculosis had associated Pulmonary Tuberculosis than patients with the other types of Extrapulmonary Tuberculosis.

Patients put under observation (i.e. not ordered anti-tuberculosis treatment) - See Tables 4A and B.

In Table 4A Direct Microscopy "negative" culture 1+ and Direct Microscopy "negative" culture 2+ have been set out separately. Most of these patients were Direct Microscopy "negative" and culture 1+; their organisms were usually Niacin Test "negative" and when X-Rays were done 61.2% were found to be normal.

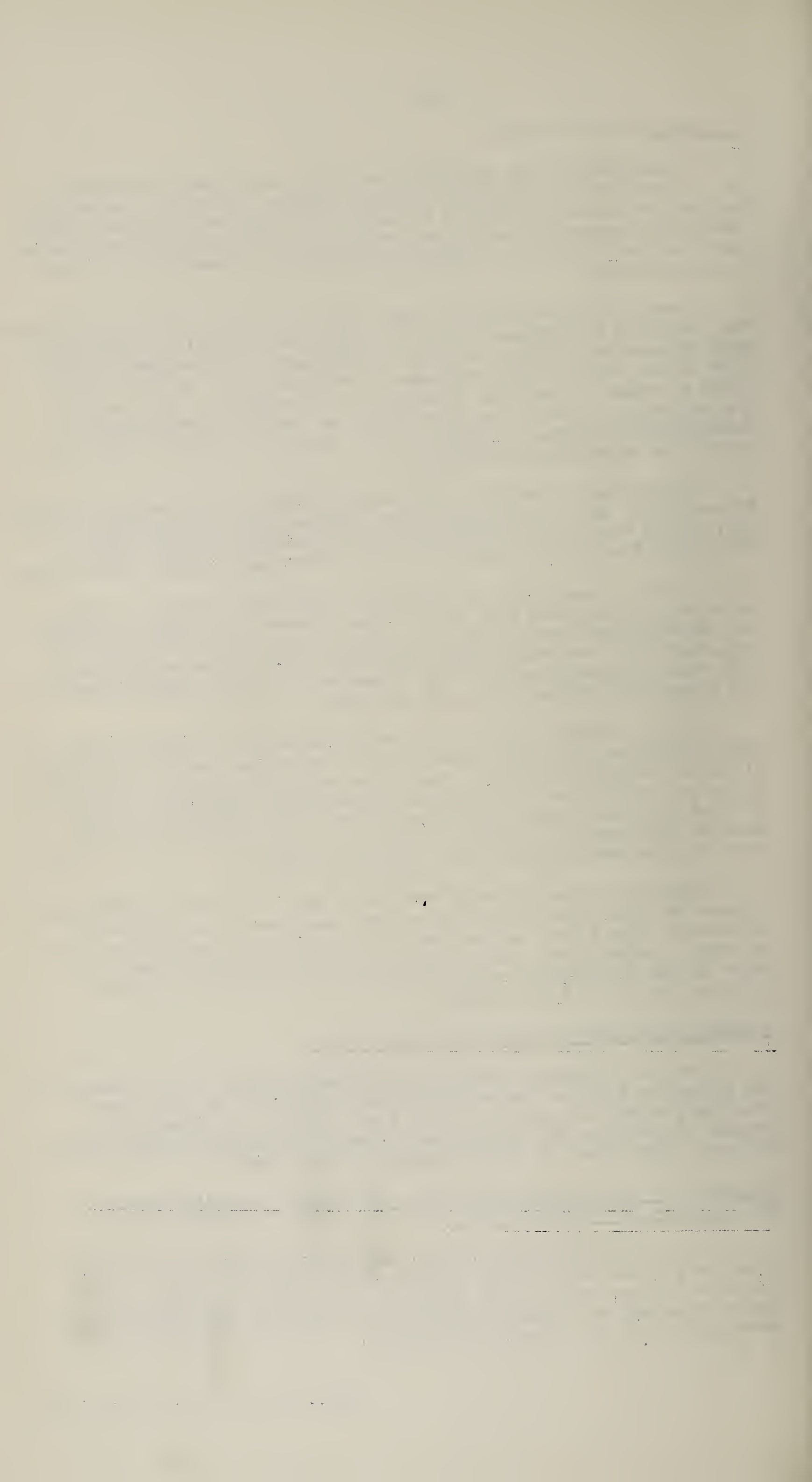




Table 4B sets out the composition of the "Observation Register". Of those initially registered for observation 75 were subsequently ordered anti-T.B. treatment. 27 patients (7.8% of those X-Rayed) had cavities, probably of a non-tuberculous nature.

Patients put on treatment in 1969 and followed up over a 24 month period (at least) to the end of 1971 - See Table 5.

These patients have been categorized in the same way as the 1971 cohort in Table 3A except that X-Ray status is omitted.

Only 40.4% of these patients completed treatment successfully in the period between January 1969 and December 1971. Stricter criteria (for having completed treatment) were used on this occasion compared to the 1968 cohort reviewed in the 1970 Annual Report - the successes in 1970 were slightly better (41.6%).

If a quantitative assessment is made of the number of people who collected at least 12 months supply of tablets over the follow up period (irrespective of the outcome) - no more than 41.4% (30.4% + 11.0%) of patients achieved this, which is not much better than those who successfully completed treatment.

Again, as was noted in 1970, we have no cause to celebrate over these very poor results. The fact that not more than 36% of the most highly sputum "positive" patients completed treatment is a sad indictment of the programme.

The education of the patient at diagnosis and thereafter and the more rapid tracing of defaulters are solutions to this major problem which have been mentioned in previous annual reports. An integrated programme will only work well if its staff are highly motivated. Unfortunately staff motivation in our country varies a great deal from one health agency to another.

Up to the end of 1971 there had been only 2 relapses, one of which was with a "positive" sputum - this at least is gratifying.

#### Vaccination with B.C.G. and Small Pox

"Mass" Vaccination Programme - Table 6A, 6B, 6C.

Vaccination in this phase of the programme is carried out by a mobile vaccinating team who spend 2 days at each school (which acts as a vaccination centre) and vaccinate school children and all non-school going children living near the school. The two vaccinations are made simultaneously. No preliminary tuberculin testing is carried out.

Shiselweni District was completed and Vaccination was begun in HHCHHO District. The coverage in Shiselweni District is presented in Table 6B. compared to the coverage in Lubombo District (52.9%) there has been an improvement in so far as B.C.G. vaccination is concerned. There has also been an improvement in the coverage of Small Pox vaccination.

Just over 2,200 more B.C.G. and just over 1,400 more Small Pox vaccinations were made during 1971 (in this phase of the programme) compared to 1970.

Maintenance Vaccination Programme - Table 7A, 7B, 7C, 7D, 7E.



In this phase of the programme 1,400 more B.C.G. Vaccinations and twice as many Small Pox Vaccinations were carried out by nurses in charge of clinics and in hospitals. In a very few instances school children in schools nearby to clinics were vaccinated by the clinic nurses.

The "maintenance" vaccination programme has been almost immobile since its inception. Progress thus far has been almost non-existent. It is hoped to rejuvenate this programme during 1972.

In Table 8 is set out the total small pox vaccinations done in the country in 1971. The coverage achieved was 12.72%.

B.C.G. and Small Pox Vaccination Lesion assessment - Tables 9 and 10.

2.63% of B.C.G. Vaccinations which were assessed were found to be unsuccessful.

7.18% (primary) to 16.64% (Revaccination) Small Pox Vaccinations which were assessed were likewise found to be unsuccessful. This is the first year in which such assessments have been carried out.

Other Comments

1. From June 1971 a regular weekly service was organised to outlying clinics to collect sputum specimens and carry correspondence to and from the T.B. Centre and the Laboratory. The clinics visited (about 30) have poor postal facilities - the service was introduced to overcome this difficulty and to encourage a greater collection of specimens by the clinic staff.

2. Dr. J.J. Paviot, W.H.O. Regional Adviser for Communicable Diseases (T.B.) visited the country in order to review the Programme as a whole. Recording and reporting procedures both at the Centre and in the clinics were simplified as a result of his visit.





TABLE 1A. "CASE" FINDING - 1971

C A T E G O R I E S	D I S T R I C T S				
	MANZINI	SHISELMENI	LUBOMBO	HHOHHO	TOTAL
A. Participating Hospitals/Clinics/Gen. Practitioners	17 - 28	10 - 14	13 - 20	11 - 16	51 - 78
B. Number of sputa from A. examined by Direct Microscopy. ("First Time" specimens.)	5322	1777	1127	2393	10,619
C. "Cases" <sup>a</sup> found on Direct Microscopy of B.	172	141	94	148	555
D. Rate% $\left\{ \frac{C \times 100}{B.} \right\}$	3.38	7.94	8.35	6.19	5.22
E. "Cases" <sup>a</sup> found on culture only (Direct Mic. "Negative")	-	-	-	-	257
F. Rate% $\left\{ \frac{E \times 100}{B - C} \right\}$	-	-	-	-	2.55
G. TOTAL "CASES" <sup>a</sup> (C + E.)	-	-	-	-	812
H. INCIDENCE $\left\{ \frac{\text{CASES} \times 1000}{\text{TOTAL POPULATION 10 yrs.+}} \right\}$	Dir. Mic. "Pos." & Dir. Mic. "neg" Cult. "pos." 2.98/1000, 25/1000				

a. "case" = patient with pulmonary tuberculosis who is also sputum "positive".

b. Total population 10 yrs & over = 273, 528 (mid 1971 projection of 1966 census - residents only - see H.W. Jones - Report on the 1966 Swaziland population census, 1968, p.634 publ. Swaz. Govt.)

TABLE 1B "FIRST TIME" X-RAYS

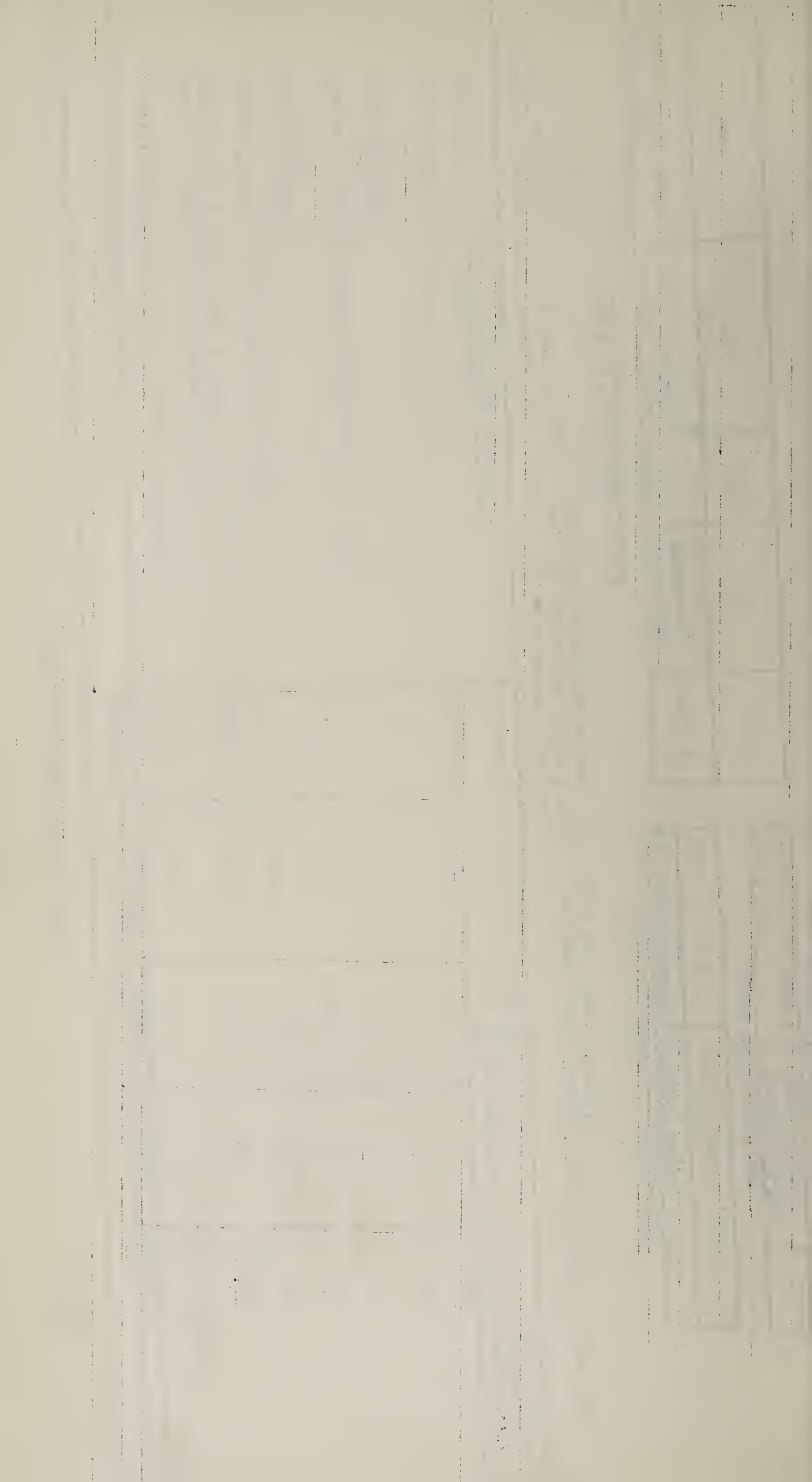
70 mm X-Rays Taken at T.B. Centre	Referred X-Rays from A. (above).	TOTAL	Total with Pulmonary Abnormalities	Rate %
3418	671	4089	862	21.1

TABLE 2. FOLLOW UP" SPUTUM EXAMS.

MANZINI	SHISELMENI	LUBOMBO	HHOHHO	TOTAL
2072	708	458	846	4084

FOLLOW "UP" X-RAY EXAMS

70mm X-Rays taken at T.B. Centre	Referred X-Rays from A.(above)	TOTAL
1094	170	1264



PATIENTS PUT ON AMBIO-100 TREATMENT CATEGORISED BY BACTERIOLOGICAL &amp; X-RAY STATUS. (1971) TABLE 3A.

	Dir.Mic.4+&3+	Dir.Mic.2+&1+	Dir.Mic.0, Cult.4+&3+	Dir.Mic.0, Cult.2+&1+	Dir.Mic.0, Cult.0; X.R.+	TUBERCULIN+	TOTALS
TOTAL NUMBER	394 i (37.1%)	130(-1) c. i (12.1%)	039 i (3.7%)	148(-2) c. i (13.8%)	186 i (17.5%)	104 d.e. i (9.8%)	1006(-3) f.g. c. i (94.0%)
WITH CAVITY ON X-RAY	124 h (67.5%)	032 h (58.2%)	011 h (44.0%)	008 h (11.28%)	022 h (11.8%)	-----	197 h (32.9%)
WITHOUT CAVITY ON X-RAY	060	024	012	046	164	-----	306
X-RAY NORMAL	000	000	001	017	-----	017	035
NO X-RAY TAKEN	210	075(-1) c.	014	077(-2) c.	-----	087	463(-3) c.

c."cases" of extrapulmonary Tuberculosis counted in Table 3B.  
d. This total includes one child over 5 yrs. (see text) with strongly positive tuberculin reaction.  
e. This total includes one child (a contact) whose tuberculin test reaction was less than 10 mm.

f. Included in this total are 2 patients referred from South Africa (details incomplete).

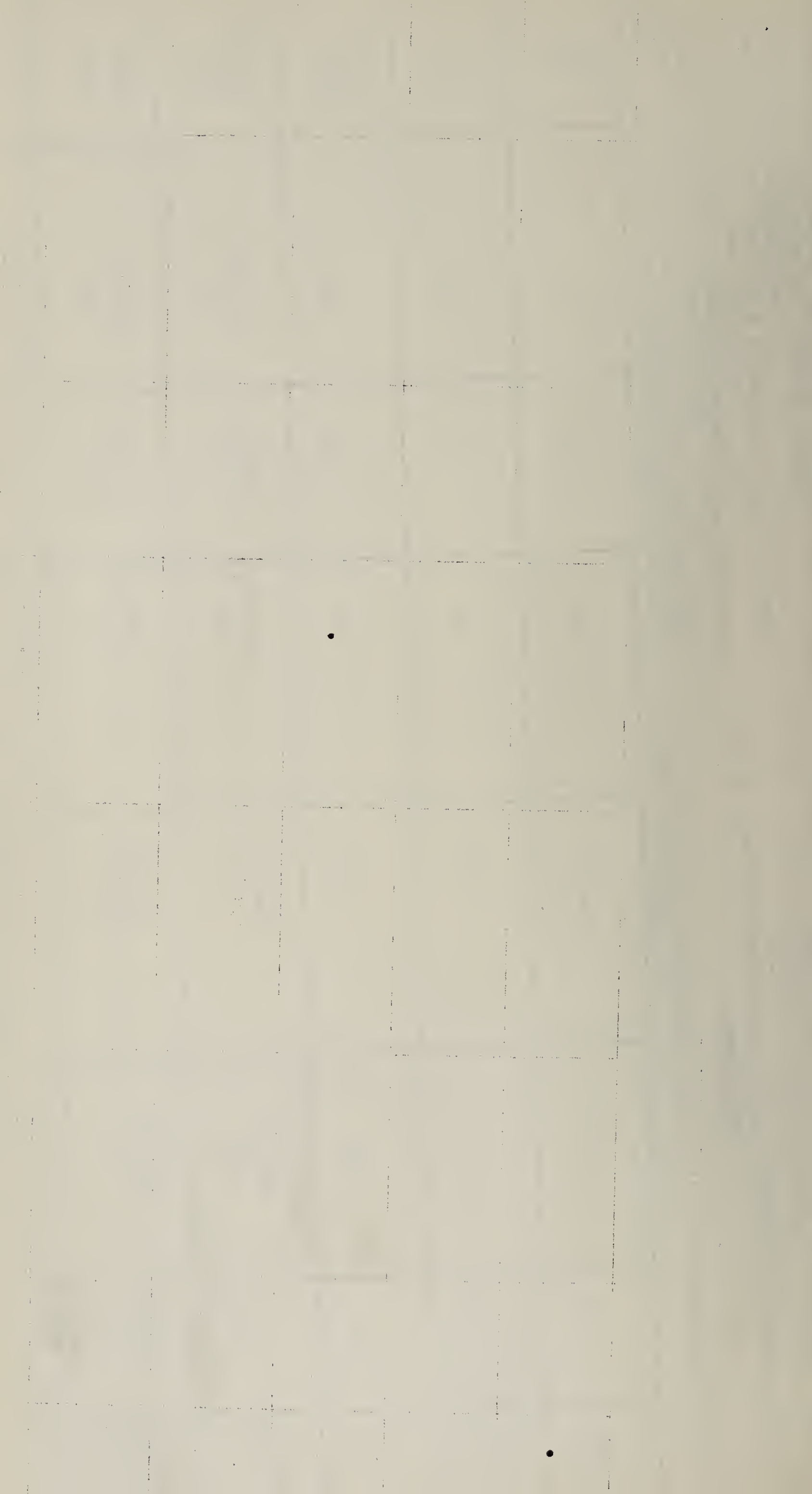
g. Included in this total are 3 missing records.  
h. X-Rays with cavities as a percentage of all X-Rays taken (in the various categories).  
i. Categories of Disease as a percentage of all patients put on treatment (including extrapulmonary tuberculosis - see table 3B).

Method: 1006-(3+5) = 998+64=1062 from which these percentages were derived.

## EXPLANATION

Direct Microscopy 0=No tubercle bacilli on standard microscope field  
1+=1-5 " " " " "  
2+=6-24 " " " " "  
3+=25 or more tubercle bacilli on standard mic. field,  
4+=Tubercle bacilli in most mic. fields.  
0= No colonies : Culture 3+=100 or more colonies  
1+=1-24 " " 4+=Confluent growth.  
2+=25-99 " " 4+=X-RAY SUSPECTIVE OF T.B.







EXTRAPULMONARY TUBERCULOSIS 1971

TABLE 3 B.

TYPE OF EXTRAPULMONARY TUBERCULOSIS	TOTALS	HISTOLOG- ICALLY PROVEN	ASSOCIATED WITH PULM. T.B.	ASSOCIATED WITH OTHER EXTRA- PULM. TYPES	EXTRAPULM. T.B. OCCUR- RING ON ITS OWN
GLAND	53	12	20	04	29
SPINE	15	00	06	00	09
HIP	05	02	03	01(-1) <sup>j</sup>	02
JOINT KNEE	02	00	00	00	02
ELBOW	01 (-1) <sup>j</sup>	00	01(-1) <sup>k</sup>	01(-1) <sup>j</sup>	00
TARSUS	01	00	00	00	01
BONE PUBIS	01	00	00	00	01
EPIDIDYMU	01	00	01	00	00
GENITAL TESTES	01	01	00	00	01
ENDOMETRIUM	01	00	00	00	01
VULVA	01	00	01	00	00
SKIN	02	00	00	00	02
TENDON	01	00	00	00	01
BREAST	03	01	01	00	02
PERICARDIUM	03	00	00	00	03
PERITONEUM	05	01	01	00	04
CAECUM	01	00	00	00	01
LIVER	01	01	01	00	00
EYE	02	00	00	00	02
MENINGES	04	-	01	00	03
GRAND TOTAL	<sup>j</sup> 104(-1)	18	<sup>k</sup> 36(-1)	<sup>j</sup> 6(-2)	<sup>i</sup> 64 (6.0%)

i. see Table 3A

j. one person with elbow and hip involved

k. The same person with pulmonary disease counted in Table 3A



PATIENTS FOUND DIR. MIC. NEG., CULT. 1+&2+ BUT NOT ORDERED TREATMENT PURPOSELY (1971)

TABLE 4A.

CATEGORIES	DIR.MIC.O, CULT. 1+	DIR.MIC.O, CULT. 2+
TOTAL NUMBER	1.m. 6 3	n. 0 7
WITH CAVITY ON X-RAY	0 1	0 0
WITHOUT CAVITY ON X-RAY	0 7	0 0
NORMAL X-RAY	r. 1 61.2%	0 2
NO X-RAY TAKEN	4 4	0 5

- l. includes one urine specimen
- m. only one specimen Niacin Test "positive". The rest Niacin Test "negative" (40), doubtful (5) or not done (17).
- n. 3 specimens Niacin Test "negative", 1 specimen Niacin Test "doubtful," the rest not done.
- r. normal X-Rays as a percentage of all X-Rays in this category.

TABLE 4B.

CATEGORIES	TOTAL NUMBER
PATIENTS REGISTERED FOR "OBSERVATION" P.	497
S. "DEREGISTERED"	75
DIR.MIC.O., CULT. " POS. " (See Table 4A).	70
DIR.MIC.O., BUT X-RAY POSITIVE	
NO CAVITY	316
CAVITY	27 2. (-1)

- p. Not ordered anti-T.B. Treatment
- q. Includes one patient with cavity from Dir. Mic. O., Cult. "Positive" category. (see table 4A).
- s. Patients "deregistered" from "Observation" and re-registered for treatment.





TABLE 5 EXPLANATIONS

Completed Treatment = at least 12 months treatment and sputum negative at end.

Defaulters = Did not complete treatment and had not returned at time of review.

Relapsed = After completing treatment sputum became "positive" or X-Ray showed deterioration.

Chronic = Patient persistently sputum "positive".

Collected tablets at least 12 times in treatment period (REGULAR) = in the first 15 months at least 12 monthly collections were made.

Collected tablets at least 12 times in treatment period (IRREGULAR) = In the first 15 months less than 12 monthly collections were made - at least 12 monthly collections were only made after the first 15 months of the treatment period.

t. successes =  $\frac{\text{completed treatment} - \text{relapses} \times 100}{\text{Defaulters} + \text{chronics} + \text{relapses} + \text{completed treatments.}}$

u. The same person/s appearing in more than one column or row.

v. Percentage of patients  $\left( \frac{\text{REGULAR}}{\text{DIAGNOSED}} \times 100 \right)$  collecting tablets irrespective of outcome.

w. Percentage of patients  $\left( \frac{\text{IRREGULAR}}{\text{DIAGNOSED}} \times 100 \right)$  collecting tablets irrespective of outcome.



1969 COHORT OF PATIENTS PUT ON TREATMENT & FOLLOWED UP TO END 1971. TABLE 5

	Mic.4+&3+	Mic.2+&1+	Mic.0.Cult.4+&3+	Mic.0.Cult.2+&1+	Mic.0.Cult.0:&2+	TUBERCULIN+	EXTRAPULM.T.B.	TOTALS
DIAGNOSED (1969)	411	132	40	347 (-2) <sup>u.</sup>	149	53	27	1159 (-2) <sup>u.</sup>
COMPLETED TREATMENT SUCCESSSES <sup>t.</sup>	90 89/247 = (36.0%)	32 32/84 = (38.1%)	04 4/29 = (13.8%)	108 108/266 = (40.6%)	54 53/112 = (47.4%)	26 26/48 = (54.2%)	15 15/24 = (62.5%)	329 327/810 = (40.4%)
DEFAULTERS	136	44	23	158(-1) <sup>u.</sup>	58	22	09	450 (-1) <sup>u.</sup>
BEFORE TREATMENT DURING DIED: TREATMENT AFTER TREATMENT	22	06	02	20	06	00.	00	56
	72(-3) <sup>u.</sup>	20(-2) <sup>u.</sup>	06	24	17	04	01	144 (-5) <sup>u.</sup>
	00	00	00	00	00	00	01(-1) <sup>u.</sup>	01 (-1) <sup>u.</sup>
RELAPSED	01(-1) <sup>u.</sup>	00	00	00	01(-1) <sup>v.</sup>	00	00	02 (-2) <sup>u.</sup>
CHRONIC	23(-2) <sup>u.</sup>	08	02	01	00	00	00	34 (-2) <sup>u.</sup>
STILL ON TREATMENT END '71	59	18	03	20	11	01	02	114
REFUSED TREATMENT	03	02	00	05(-1) <sup>u.</sup>	00	00	00	10(-1) <sup>u.</sup>
LEFT COUNTRY	13(-2) <sup>u.</sup>	05(-1) <sup>u.</sup>	00	11	03	00	00	32(-3) <sup>u.</sup>
COLLECTED TABLETS AT LEAST 12 TIMES IN TREATMENT PERIOD:(REGULAR) &(IRREGULAR)	(140 <sup>v.</sup> ) (34.1%) (29. <sup>w.</sup> ) (7.05%)	40 <sup>v.</sup> (30.3%) 19 <sup>w.</sup> (14.4%)	(17.5%)07	(27.8%)96	(28.2%)42	(32.1%)17	(33.3%)09	(30.4%)351
			(7.5%) <sup>w.</sup> 03	(11.6%)40 <sup>w.</sup>	(13.4%)20 <sup>w.</sup>	(20.8%)11 <sup>w.</sup>	(18.5%)05 <sup>w.</sup>	(11.0%)127 <sup>w.</sup>
COLLECTED TABLETS FOR 9-11 MONTHS	24	06	01	17	09	04	02	(5.3%) 62





TABLE 6A

1971 "MASS" VACCINATION PROGRAMME SHISELWENI DISTRICT

AGE IN YEARS	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
0	349	334	021	355
1 - 4	1,441	1,312	254	1,566
5 - 14	5,975	3,999	2,006	6,005
15+	346	443	1,797	2,240
TOTAL	8,111	6,088	4,078	10,166

TABLE 6C

1971 "MASS" VACCINATION PROGRAMME HHCHHC DISTRICT

AGE IN YEARS	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
0	971	507	005	512
1 - 4	4,629	4,096	291	4,387
5 - 14	12,177	8,202	4,082	12,284
15+	792	1,423	6,136	7,559
TOTAL	18,569	14,228	10,514	24,742



TABLE 6B  
B.C.G./S.F. VACCINATION COVERAGE 1970-71 SHISELWENTI DISTRICT

AGE IN YEARS	B.C.G. VACC.	<sup>x</sup> CORRECTED	ELIGIBLE POPULATION	COVERAGE %	SMALL POX VACC.	<sup>x</sup> CORRECTED	ELIGIBLE POPULATION	COVERAGE %
0 - 4	9,019	9,352	19,746	47.4	8,546	8,580	19,746	43.4
5 - 14	23,050	24,058	37,159	64.8	23,470	24,151	37,159	64.9
15+	1,525	1,699	<sup>y</sup> _____	<sup>y</sup> _____	16,361	16,597	48,341	34.3
TOTAL	33,594	35,109	(0-14)56905	(6-14)58.7	48,377	49,328	105,246	46.8

<sup>x</sup> The difference between the column "B.C.G. VACC" and the column "CORRECTED" represents people in the district in 1970/71 found to have been successfully vaccinated prior to 1970. The same applies to "SMALL POX VACC." and "CORRECTED" columns.

<sup>y</sup> Only 15 year olds vaccinated in the age group 15+, total eligible population unknown, thus coverage is unknown.





TABLE 7A

1971 MANZINI DISTRICT "MAINTENANCE" VACCINATION PROGRAMME

AGE IN YEARS	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
0	521	920	133	1,053
1 - 4	562			
5 - 14	183	150	868	1,018
15+	006	047	4,688	4,735
TOTAL	1,272	1,117	5,689	6,806

TABLE 7B

1971 SHISELWENI DISTRICT "MAINTENANCE" VACCINATION PROGRAMME

AGE IN YEARS	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
0	568	442	027	469
1 - 4	134			
5 - 14	023	074	106	1180
15+	000	008	3,132	1,140
TOTAL	725	524	3,265	3,789



TABLE 7C

1971 LUBCMBC DISTRICT "MAINTENANCE" VACCINATION PROGRAMME

AGE IN YEARS	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
0	078	047	000	047
1 - 4	131			
5 - 14	135	114	008	122
15+	002	009	1,720	1,729
TOTAL	346	170	1,728	1,898

TABLE 7D

1971 HHOHHO DISTRICT "MAINTENANCE" VACCINATION PROGRAMME

AGE IN YEARS	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
0	1,171	726	092	818
1 - 4	954			
5 - 14	174	037	467	504
15+	004	011	4,765	4,776
TOTAL	2,303	774	5,324	6,098

TABLE 7E

1971	B.C.G. VACC.	SMALL POX		
		PRIMARY VACC.	REVACCINATION	TOTAL
TOTAL ALL AGES	31,326	22,901	30,598	53,499

TABLE 8

TOTAL POPULATION MID 1971 PROJECTION OF 1966 CENSUS	TOTAL SMALL POX VACCINATIONS 1971	COVERAGE
421,079	53,499	12.72%





B.C.G. VACCINATION LESION ASSESSMENT		
DISTRICT: <u>LUBOMBO &amp; HHOHNO</u>		DATES OF ASSESSMENT: <u>July - Dec. 1971</u>
AGE IN YEARS	LESION PRESENT	LESION ABSENT
0 - 4	118	01
5 - 14	474	16
15 I	38	00
TOTAL	630	17 (2.63%)

TABLE 10.

SMALL-POX VACCINATION LESION ASSESSMENT.				
DISTRICTS: <u>SHISELENI &amp; HHOHNO</u>		DATES OF ASSESSMENT: <u>1971</u>		
AGE IN YEARS	PRIMARY VACCINATION		REVACCINATION	
	LESION PRESENT	LESION ABSENT	LESION PRESENT	LESION ABSENT
0 - 4	126	00	5	1
5 - 14	753	64	354	69
15I	39	07	52	12
TOTAL	918	71(7.18%)	411	82(16.64%)
COMBINED TOTALS		989	493	



ANNUAL MALARIA REPORT

The rainfall for the Malaria Year was steady through out showing peaks in December and January when transmission is at a low degree, and then falling to a very low level in February followed by steady declining peaks of rainfall which was sufficient to maintain a constant population of vectors *A. gambiae* *A. funestus* and other anophelines. Rainfall and temperature figures for various stations are shown in the following table.





METEOROLOGICAL REPORT

Month	<u>Matsapa</u>			<u>Siteki</u>			<u>Big Bend</u>			<u>Mananga</u>			<u>Lavumisa</u>		
	Altitude 2000 ft. Rainfall Temp. <sup>0</sup> c in mm. Absolute Max. Min.			Altitude 2200 ft. Rainfall Temp. <sup>0</sup> c in mm. Absolute Max. Min.			Altitude 500 ft. Rainfall Temp. <sup>0</sup> c in mm. Absolute Max. Min.			Altitude 950 ft. Rainfall Temp. <sup>0</sup> c in mm. Absolute Max. Min.			Altitude 600 ft. Rainfall Temp. <sup>0</sup> c in mm. Absolute Max. Min.		
July 1970	7.4	30.5	3.5	4.0	27.9	5.9	2.5	31.5	0.0	4.0	32.0	6.0	0.0	34.5	4.4
August	64.1	33.0	6.0	77.0	31.4	9.8	19.5	35.5	5.5	7.9	36.0	12.0	37.0	35.9	10.0
September	18.4	33.7	9.0	10.5	32.6	9.7	17.0	36.5	9.0	14.0	37.0	12.0	24.0	38.9	10.0
October	119.7	37.0	8.5	122.0	34.8	8.9	89.0	39.0	12.3	41.2	37.0	12.0	20.0	40.0	14.5
November	112.0	34.5	13.5	97.5	33.9	12.9	23.4	38.0	14.5	115.5	37.0	16.0	18.7	38.0	12.0
December	60.2	36.8	12.0	69.5	35.0	12.6	82.7	38.5	12.6	182.9	36.0	17.0	70.5	40.1	6.1
January 1971	207.7	37.5	15.0	79.0	36.5	14.4	142.3	39.5	16.0	144.0	36.0	18.0	97.5	42.1	13.0
February	46.8	30.7	13.0	115.5	30.6	13.4	15.5	35.6	13.0	47.9	33.0	16.0	11.0	39.0	10.0
March	83.3	38.5	14.5	50.8	33.5	15.6	89.0	37.9	16.0	70.0	34.0	18.0		39.5	11.0
April	139.1	30.6	12.0	96.8	29.8	13.8	80.0	34.5	12.0	90.8	32.0	16.0	17.0	39.0	10.0
May	28.6	31.0	5.1	29.5	30.7	8.1	36.0	34.5	1.5	28.0	33.0	8.0	1.0	37.0	7.5
June	3.3	28.6	5.5	11.3	26.2	6.1	9.0	30.0	1.5	3.0	29.0	8.0	4.0	35.3	7.2



POPULATION AND HUT COUNT

Population figures for areas actively worked by malaria field staff viz. Headman and Health Assistants is as follows.

<u>Adults</u>	<u>Children</u>	<u>Infants</u>	<u>Total</u>
35505	27059	4634	67198

The total estimated population for the whole of the malarious area i.e. maintainance and consolidation areas was 140,493.

Malaria Control Measures

Residual spraying with D.D.T. 75% w.d.p. was done in all Dwellings on the Sugar Estates, all farms in the Big Bend area and a belt to form a cordon sanitaire along the Northern border with the Transvaal was sprayed. Spraying was finally completed during the first quarter of 1971.

In all a total of 33,253 structures had been sprayed and for this 3,656 Kg. D.D.T. 75% w.d.p. was utilised.

Surveillance Operations

These were continued by field staff with bicycle transport, and have to take blood films from immigrants, sick persons and suspected carriers, space spray dwellings that have not been sprayed with D.D.T., and which are ideal for entry of mosquitoes and are near breeding sites, treatment of positive cases, and being of assistance to the entomological team when working in his area.

Parasitology

Blood slides taken during the year were examined at the Health Office. Manzini by a team of 4 microscopists. In addition to their normal work load, they were also involved in the examination of blood films taken during two Mass Blood Survey operations which were mounted in the North and at Vuvulane and Tambankulu Estates to discover asymptomatic parasitaemias (carriers), who it is thought are the cause for explosive out breaks of malaria when breeding conditions are favourable. Epidemiological investigations of positive cases doe reveal that some people who are shown to have the parasites in their blood do not suffer from anything serious except for occasional headaches.

The following results were recorded in respect of blood films examined.

<u>Source</u>	<u>Negative</u>	<u>Positive</u>	<u>Total</u>
Indigenous	34524	73	34597
Immigrants	<u>956</u>	<u>53</u>	<u>1009</u>
Total	<u>35480</u>	<u>126</u>	<u>35606</u>

<u>Species:</u>	Plasmodium falciparum	113
	Plasmodium malariae	5
	Plasmodium falcip/mal.	8

Annual Parasite Incidence :- 0.81

Annual Blood Examination Rate :-





Blood films of immigrants originated from the following neighbouring countries.

<u>Source</u>	<u>Negative</u>	<u>Positive</u>	<u>Total</u>	<u>%Positive</u>
Mozambique	233	48	280	16
Zululand	202	2	204	0.9
Transvaal	517	0	517	0
Others	<u>5</u>	<u>3</u>	<u>8</u>	37
	957	53	1009	

#### Analysis of Positive Cases

In the quarter Jan. to March there were 21 positive cases of which 3 were fresh Indigenous cases that occurred as isolated cases and did not indicate continuing transmission as no other cases were found. Where the cases occurred no residual spraying had been done. All other cases were Imported. During the quarter April to June which is the peak of the transmission season, there were 78 positive cases of which 26 were fresh infections. In 8 of the fresh positive cases no spraying had been done in the areas where these cases had occurred.

Entomological surveys done at night did show the presence of vectors where psotive cases had occurred and also in areas that had not been sprayed.

As vector mosquitoes are not naturally infective, the fresh positive cases did indicate the presence of carriers (asymptomatic para-sitaemias) in the communities where the fresh positive cases were found. It was because of this, that a Mass Blood survey operation was mounted through which we were able to find and add to the number of Imported cases discovered. By continuing the Mass Blood Survey operation we recorded in the 3rd Quarter July to September 16 positives of which 8 were Indigenous only 2 being fresh isolated infections.

In the last quarter October to December there were 11 positive cases of which two were Indigenous fresh infections with one found during the Mass Blood Survey operation at Vuvulane and the other found at Sitsatsaweni, not far from the border with P.E.A. yet patient denies ever having gone to visit there. The Mass Blood Survey will still be continued with, so as to weed out all carriers in the lowveld.

Entomology: Identification of adult mosquitoes was carried out when these were found and sent in by field staff.

Vector mosquitoes *A. gambiae* were sent in by field staff from Nkambeni 1/10 Ngomane 0/18 and Magidzela N/35 one mosquito sent in from each area. Most other vector *A. gambiae* were found during Night Biting Catches, and mainly with man sitting outside near the Cattle Kraals which was the case at Stokoto 1/20, Nkambeni 1/10, Mpofu H/8, and H/9 Magidzela N/35 Ngomane 0/18, Mlaula and Mpangela Ranch. Spray sheet collections did show the presence of *A. gambiae* at Stokoto 1/20 thereby indicating inside resting where no residual spraying had been undertaken.

Pit Shelters: Collections of mosquitoes from these, of which 14 are in existence in various parts of the lowveld did not reveal any *A. gambiae* but only the *A. funestus* Group and other anophelines.

The pit shelters are there mainly to determine response residual spraying, outside resting and to study hibernation.



Meetings: The Director, Brigade du Paludismo and other high ranking officers of the Ministry of Health, Portuguese East Africa based in Lourence Marques paid a visit to the Ministry of Health - Swaziland, and matters pertaining to Malaria in Swaziland were discussed when the visitors came over to the Health Office.

The Regional Director for Africa of the World Health Organisation visited the Health Office where he was given a brief resume of the situation of malaria and activities of the Malaria Control Unit, besides other matters.

Conference: The Annual Malaria Conference took place at the William Pitcher Teacher Training College from 23 to 27th August 1971. Field staff were lectured to on all aspects of Malaria Control Activities by senior members of the malaria control unit.

Lectures: These together with demonstrations were given to student nurses at the Raleigh Fitkin Memorial Hospital - Manzini.





ANNUAL REPORT : BILHARZIA CONTROL 1971

At the beginning of the year two large control programmes were under way. Both were directed at the elimination or control of vector snails. Both had been initiated in the second half of 1970. In that the aims and method of control of both programmes differed, it has been most interesting watching their evolution.

The Manzini scheme financed mainly by the Manzini Town Council was the first off the ground. This is mainly directed at focal snail control of areas along water courses, where because of the absence of footbridges or stepping stones, people are obliged to ford them or in the absence of a better source of water, use streams for ablutions and as a source of supply of water for domestic purposes.

As can be seen from the accompanying table a fair degree of success can be claimed even though the scheme has been in operation for just under one and a half years. Apart from the fact that the total number of snails collected during routine surveys has dropped significantly, more important still is the fact that towards the end of the year it was the exception rather than the rule to find many infected snails. Since with focal control the aim is to eliminate vector snails at so called "contact points" and not to eradicate snails along the entire length of a water course, this must be considered satisfactory.

Both surveys and mollusciciding are carried out at intervals of six weeks except for a short period during the winter months. Initially molluscicide was only used when vector snails were found. Because of the unit's improved financial position at the start of the new financial year this was extended to cover all contact points six weekly. Undoubtedly this has contributed to better survey results achieved in the second half of the year under review.

MZIMNENE RIVER AND TRIBUTARIES

Date	No. of Physopsis	No. of Biomphalaria	*Snails Shedding mammalian cercariae
Jan/Feb '72	256	17	18
Feb/March 72	238	50	15
March/April	140	4	8
April/May	62	Nil	2
May/June	23	Nil	1
August	37	Nil	1
October	24	Nil	1
November	42	4	1

\* No biomphalaria found shedding cercariae.

At first glance the above table may not appear unduly significant. However compared to last year's snail counts it is most heartening. Moreover when it is realised that the table covers the Mzimnene river and twelve tributaries with a total of 185 treated crossing points, it gives grounds for optimism.





Most acknowledged authorities on bilharzia control maintain that reliance on a single method of control with local imperfections as one inevitably gets with focal control, is unlikely to lead to eradication within an acceptable period of years, if ever. Most authorities recommend a combination of methods, of which snail control is by far the most important. Other lines of attack such as therapy and provision of safe domestic water supplies have an important part to play in any control scheme. Sanitation, that is the provision of latrines with a view to decreasing the amount of excreta reaching natural waters has been shown to have a negligible effect on the level of endemicity of bilharziasis. The explanation for this is that the level of infection is mainly dependent on the total number of vector snails and the frequency with which the local population have contact with natural waters. It has been shown that in an endemic area, where people are obliged to have frequent contact with rivers, streams and the like, no matter how good the level of sanitation as judged by the presence and use of latrines, contamination of water courses remains high, so that, there are always more miracidia than there are susceptible snails.

Applying this to Manzini where the current snail control programme is far short of ideal, it followed that supporting measures had to be developed if the scheme was to produce a steady drop in the level of infection in the community, leading initially to a reduction in morbidity and severity and finally to eventual eradication. A start along these lines has been made. During the past year 3,746 pupils attending Manzini schools were examined for evidence of urinary bilharziasis. Of these 1,850 were found positive and 1,896 were negative for the infection. Of those found positive 1,412 were treated with Etrenol. This leaves a balance of about 400 students who are scheduled for treatment in the new year.

The prevalence rate for Manzini that would seem to emerge from these figures is just under 50%. It would, however, be quite wrong to apply this figure to the school going population of Manzini generally, as many schools in this area draw pupils from areas where bilharziasis is not endemic. This applies especially to students attending secondary schools. A more accurate reflection of the prevalence in Manzini can be obtained from figures obtained from Elwandle Primary School, where of 80 children examined, 61 were found to be suffering from urinary bilharziasis, giving a figure of  $66 \frac{2}{3}$  percent positive. In the case of St. Paul's school which also draws its pupils from Manzini the prevalence rate among 330 children was 59%. It is suggested, therefore, that the overall percentage among the school going population of Manzini lies somewhere between these two figures.

Details of individual schools are as follows:

Elwandle Primary School

Age Group	No. Positive for Sch. Haem	No. Negative for Sch. Haem.
5 - 9 years	21	7
10 - 15 "	37	8
16 & over	3	4
Totals	61 + ve	19 - ve





Raleigh Fitkin Memorial Schools

Age Group	No. Positive for Sch. Haem.	No. Negative for Sch. Haem.
5 - 9 years	111	167
10 - 15 years	262	156
16 & over	99	141
Totals	472 + ve	464 - ve

St. Theresa's Primary & Secondary Schools

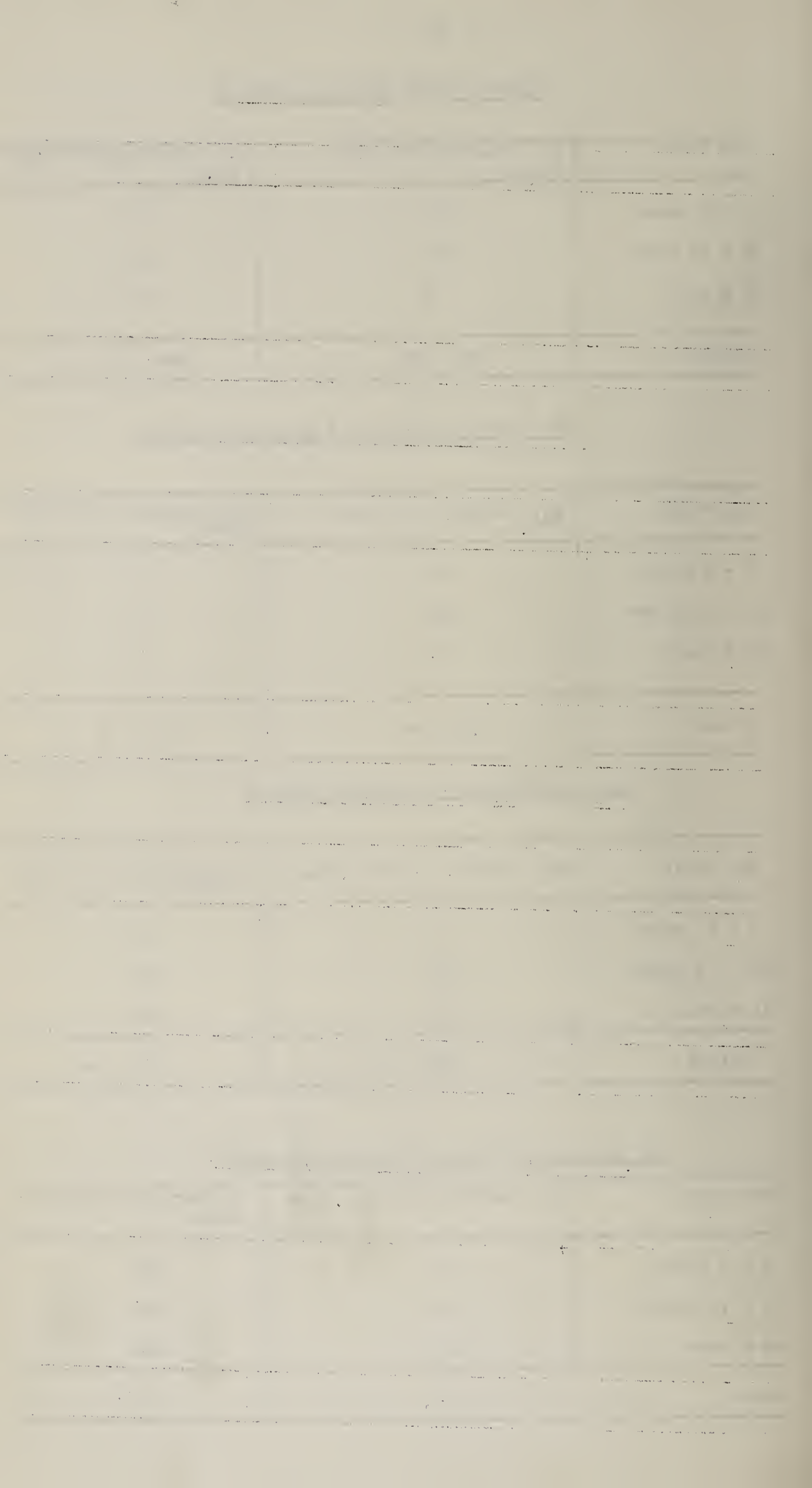
Age Group	No. Positive for Sch. Haem.	No. Negative for Sch. Haem.
5 - 9 years	70	61
10 - 15 years	180	93
16 & over	87	75
Totals	337 + ve	229 - ve

Salesian Primary & Secondary Schools

Age Group	No. Positive for Sch. Haem	No. Negative for Sch. Haem.
5 - 9 years	75	64
10 - 15 years	218	111
16 & over	156	198
Totals	449 + ve	373 - ve

St. Michael's Primary & Secondary Schools.

Age Group	No. Positive for Sch. Haem	No Negative for Sch. Haem.
5 - 9 years	16	156
10 - 15 years	56	220
16 & over	26	100
Totals	98	476



Central School (Manzini)

Age Group	No Positive for Sch. Haem	No Negative for Sch. Haem
5 - 9 years		1
10 - 15 years	130	77
16 & over	91	109
Totals	221 + ve	187 - ve

St. Pauls School

Age Group	No positive for Sch. Haem	No Negative for Sch. Haem.
5 - 9 years	68	92
10 - 15 years	139	48
16 & over	6	7
Totals	213 + ve	147 - ve

The above figures are interesting from many points of view. Given time much work could be done to try and determine why the prevalence of infection is much higher in the 10 to 15 year age group. There may also be a significant sex difference in prevalence. Furthermore, the figures for St. Michael's School are so different from those obtained in any of the other schools, that these too deserve investigation.

Snail control combined with treatment of infected children has so far been confined to Manzini. This has been a deliberate decision because control of vector snails in this area has been less than perfect and had to be re-inforced by another worthwhile control measure.

Areas such as Big Bend where snail control, approaching eradication of vector snails is now firmly established, are also ready for re-inforcing by treatment of infected individuals. Eventually this must





.....be worked into the treatment schedule. The proposed and probable posting of a public health nurse to the Bilharzia Control Unit on a permanent basis in the new year should make possible this arrangement.

For the treatment of bilharzia there are two excellent drugs, Etrenol and Ambilhar. Etrenol, because of ease of administration, and its suitability in mass treatment has been the drug of choice. Ambilhar has been used in cases where Etrenol was contra-indicated because of hepatic enlargement. Through experience it has been decided to add another contra-indication viz., not to administer the drug to obviously malnourished and debilitated patients. Obviously malnourished patients treated with Etrenol have consistently shown a higher incidence of side effects, especially vomiting. While in no case has the vomiting been severe enough to warrant hospitalisation, it has been troublesome and resulted in the odd student losing up to one week schooling. A point noticed in these children is that, whereas vomiting during the first 48 hours was mostly involuntary, though it could be induced by food, vomiting after this period was almost always brought on by eating and could be overcome by avoiding food and taking sweet fluids in small quantities. A constant feature among these children was the presence of nausea and lethargy which for some obscure reason usually did not deter them from eating. Apart from the two exceptions mentioned above Etrenol is found to be remarkably free from side effects. Those encountered were minor and mostly had cleared up within 24 to 48 hours. Those most commonly encountered were tenderness over the injection site and vomiting. Even then not more than 20% of those treated presented with these complaints and very few children lost more than one or two day's schooling. Vomiting when it did occur normally consisted of not more than two or three episodes starting about 4 to 6 hours after treatment. In fact out of a class of 40 children it was unusual to find more than two or three children absent on the day following treatment. This contrasts with side effects found during the Etrenol trial, in 1969, in Manzini. This trial covered just over 200 students and in questioning each student carefully following treatment, symptoms were induced by detailed questioning. The present series with Etrenol was not regarded as a trial and only complaints spontaneously brought forward by students, parents or teachers were noted.

The following table gives details of the number of children rejected for treatment with Etrenol because of hepatic enlargement or malnutrition.

School	No. of children treated with Etrenol	No. of children rejected for treatment with Etrenol.
R. F. M. Schools	385	8
Salesian Schools	406	9
St. Theresa's Schools	309	10
St. Pauls School	178	11
Elwandle School	40	13
St. Michael's School	94	2
Totals	1412	53

The control scheme initiated at Ubombo Ranches, Big Bend in November 1970 has been most successful. Great credit is due to the management of the estate for having the foresight to be the forerunner in Swaziland, of a comprehensive control scheme of this type.





The scheme is based on snail control using Frescon, a Shell chemical product. It is backed up by Shell expertise and professional staff. Mr. David Atkinson, Shell Chemical representative, Swaziland, is a most active participant and a key figure in this scheme and other schemes where Frescon is used. The scheme has pioneered a new and relatively simple application technique for the molluscicide. It has highlighted the type and scope of problems one can expect to encounter on irrigated estates. It has also shown that professional staff on these estates can quickly master mollusciciding techniques and monitoring of the chemical, so that apart from survey work, the practical work in regard to water treatment with Frescon, can safely be left in their hands.

Experience gained during the year has enabled modifications of the original control programme to be introduced. These have improved the effectiveness of the scheme and also through a more efficient use of Frescon, have brought the cost of mollusciciding down to between 50 and 55 cents an irrigated acre.

Several application techniques have been used on this estate, including large and small drip feeds, knapsack spraying, flooding of drainage lines with treated water and focal spraying. The development of a new type of drip feed in the second half of the year effectively solved problems regarding the regulation of drip feed applicators. Drip feed applicators had been the cause of many tiresome delays, in that they were difficult to set up and required frequent readjustment. Mr. J. Coggins, U.N. expert attached to the William Pitcher College, Manzini, designed the prototype of the applicator now in use.

With the exception of certain drainage lines snail control throughout the estate has been excellent. Broadly speaking drainage lines are not well canalised. They tend to be very steep and rapid flowing in places, broad and shallow in other places, overgrown and generally not accessible throughout their length. On the estate they are almost the only habitat of *B. physopsis*, vectors of urinary bilharziasis. Small vegetable gardens are sometimes cultivated along the more accessible sections of these drainage lines, these being usually irrigated by water drawn from the adjacent ditch. Moreover, because they have a fish population they provide rewarding recreation for such members of the staff and their families as care to fish them.

In the early stages of mollusciciding drainage ditches proved the most troublesome to treat effectively. Various methods were tried with fair to indifferent results compared to those obtained on the estate generally. Finally a slow drip coupled with knapsack spraying was evolved which has given more satisfactory results. If however, snail control in drainage ditches is to be effective, work must be undertaken to control the growth of vegetation and to regulate the rate of flow of water. The latter could be achieved by making it either too fast for snails to establish themselves or slow enough for the molluscicides to exert its lethal effect on snails.

Other vital places on the estate from the point of view of snail control, are the Van Eyck dam and the Nyetane river.

The Nyetane river is not truly part of the estate but, forms its northern boundary. It is a slow moving weed choked stream. It was infested with vector snails many of which were found to be shedding mammalian cercariae. A large semi-shanty settlement with many beer houses has long been established on the bank of this river, directly opposite the estate. Large numbers of the estate workers cross the river during off duty periods and especially at weekends, to participate in and enjoy the dubious amenities of the area. If the transmission cycle was to be broken on the estate it was obvious that effective snail control would have to be established along the lower reaches of the Nyetane river.





From a casual examination of figures tabulated below it can be seen that treated water reaching the river from drainage lines and the tail-ends of canals on the estate did not control snail breeding, as was our expectation. A special effort was made in May to flood the Nyetane with treated water from the estate and this subsequently produced a remarkably good snail count. However, this was neither an easy nor an economic arrangement. In November one year after the initiation of the Big Bend scheme we decided that intensive knapsack spraying of the river was the only possible solution. This was started and as can be seen from snail counts obtained in November and December, is promising.

Nyetane River

Date	No. of Biomphalaria	No. of Physopsis
30.10.70 (1st Pre Treatment)	227	17
18.1.71 "	202	36
4.3.71 "	104	12
1.4.71 "	203	35
10.6.71 "	13	0
10.9.71 "	125	19
10.10.71 "	126	0
10.11.71 "	42	1
21.12.71 "	57	5

The Van Eyck dam, in reality a large artificial lake is used for water storage and recreational purposes including yachting, swimming and fishing. From the date of its completion in 1970 it was realised that the dam would form an ideal habitat for vector snails. The presence of these snails has been confirmed on many occasions and indeed, it is a sobering sight to see the shells of many millions of dead snails on the shore when the water level drops, owing to heavy water draw off. The cost of uniformly treating a body of water this size, up to 60 feet deep in places, with a molluscicide would be prohibitive and completely uneconomical. It was also considered impracticable and unnecessarily expensive to treat the entire shoreline (2 miles) and water up to a depth of six feet. Nevertheless it was imperative that control measures be taken to enable estate staff make full use of the recreational potential of the lake. This has been achieved, more or less, satisfactorily by treating a selected portion of between one and two hundred yards of shoreline, and water in this area up a depth of six feet. The method chosen was to use a knapsack sprayer with an extension lance to deposit Frescon on the lake bed or as near as possible in order to increase it's effectiveness in the area being treated. This has given good results. However, control would be greatly improved by constructing earthen jetties on either side of the area to prevent lateral movement of snails into the treated area. In addition it is probably even more important to treat a similar area of shoreline and water almost directly opposite the present controlled area. These improvements coupled with fencing run into the water to delineate treated areas accurately and prevent people from entering untreated shoreline water would be relatively inexpensive but meaningful in improvements to the scheme.



Ubombo Ranches - Snail Surveys

Date	No. of Biomphalaria	No. of Physopsis
30.10.70 (Prior to 1st treat- ment	2872	49
18.1.71	10	0
4.3.71	259	4
1.4.71	17	0
11.5.71	81	2
10.6.71	1	0
10.9.71	63	1
5.10.71	106	2
16.11.71	12	1
21.12.71	30	0

Note: No snails on this estate found shedding cercariae since December 1970.

A total of 493 employees of Ubombo Ranches Estate, Big Bend had specimens of urine or stools or both urine and stools examined with a view to getting a fairly accurate picture of the prevalence of urinary bilharziasis and a rough estimate of the prevalence of the intestinal form of the condition.

Because of the time factor and the numbers to be examined we were obliged to use a popular rapid screening technique using approximately 5 ml. of stool suspension. At a conservative estimate the number of false negatives one can expect with this technique with only a single stool examination, is at least twenty per cent.

In addition 246 pupils attending Myaluka School, Ubombo Ranches Estate, were tested in the same manner.

The results of both series of tests are tabulated hereunder.

Myaluka School - U.B.R. - Big Bend

Total No. Examined	No. of Urines	No. of Stools	Both Urine & Stool	Pos. for S. Haem	Pos. for S. Mans	Double Infections
37	36	33	32	17	7	5
14	14	13	13	2	-	-
37	33	32	29	10	16	10
4	3	4	3	-	1	-
35	33	14	11	6	6	-
12	11	5	5	8	4	4
38	36	38	36	13	19	9
41	3	2	2	3	2	2
28	38	35	35	17	18	14
	28	22	22	14	17	11
246	235	198	188	80	90	55







Employees - U.B.R. Sugar Estate -  
Big Bend

Total No. Examined	No. of Urines	No. of Stools	Both Urine & Stools	Pos. for S. Haem.	Pos. for S. Mans.	Double Infections
52	Nil	52	-	-	22	-
55	Nil	55	-	-	15	-
55	24	52	25	12	22	7
25	11	15	1	11	5	1
64	9	62	7	9	25	4
50	36	23	9	11	10	4
69	5	68	4	5	20	2
67	34	62	27	19	25	9
56	20	48	11	19	18	7
<b>TOTAL 493</b>	<b>139</b>	<b>437</b>	<b>84</b>	<b>86</b>	<b>162</b>	<b>34</b>

Prevalence rates for Myaluka school are as follows:

Urinary bilharziasis - 34% (S.Haem.)  
Intestinal bilharziasis - 40% (S.Mans.)  
Double Infections - 30% (S. Haem & S.Mans.)

For estate workers comparable rates as follows:

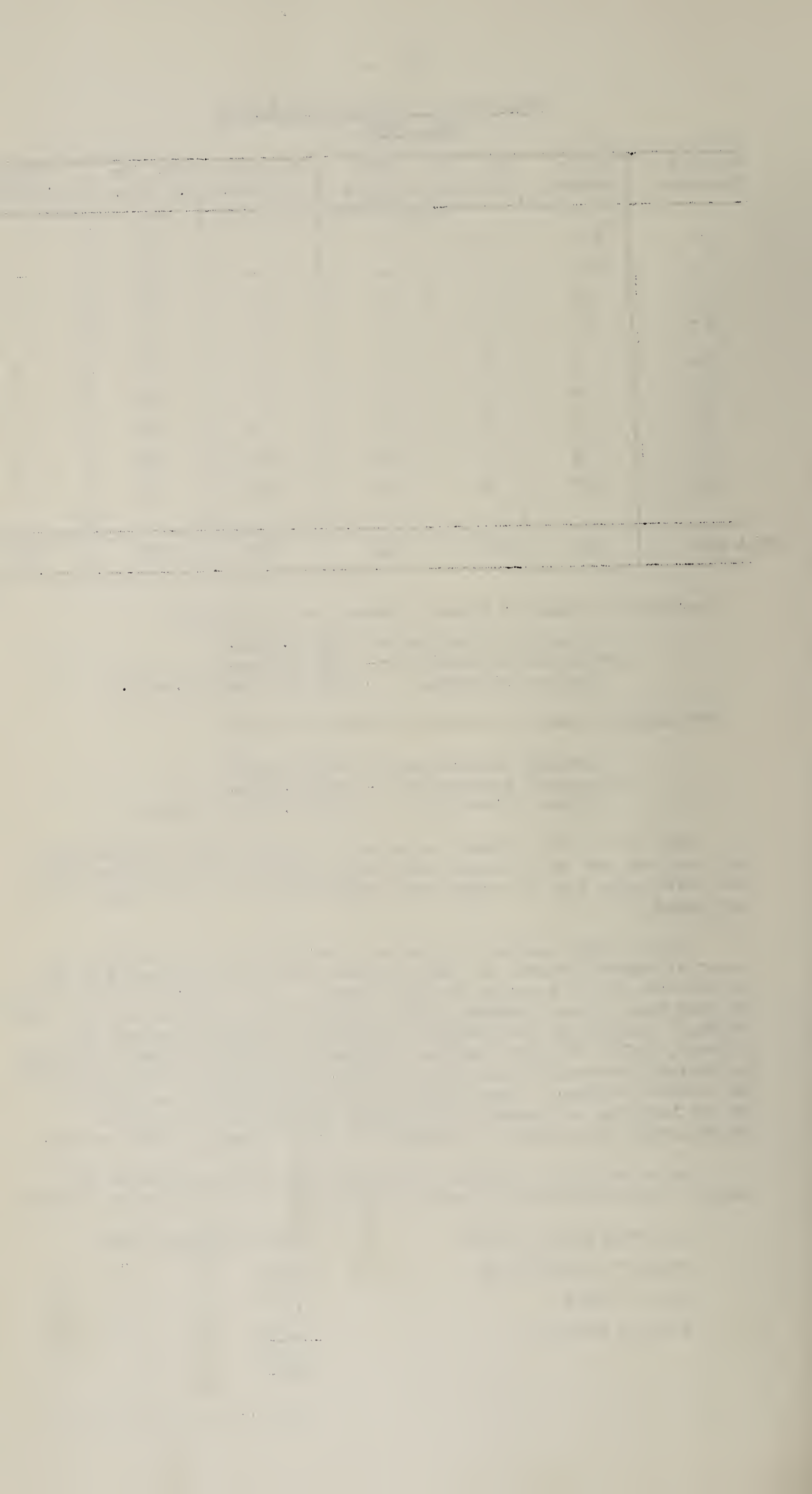
Urinary bilharziasis - 62% (S.Haem)  
Intestinal bilharziasis - 37% (S.Mans.)  
Double Infections - 40% (S.Haem & S.Mans)

For the reason stated above i.e. a single school examination only and the use of a survey screening technique it is obvious that the prevalence rate for intestinal bilharziasis is much higher than indicated.

In the last quarter of the year proprietors and managers of other irrigated estates in the Big Bend area were approached by Mr. P. Bullock, Field Manager, Ubombo Ranches, with a view to their joining the Big Bend control scheme. This resulted in an approach being made to Shell Chemicals, the estates concerned joining the scheme in October, 1971. In addition the management of Ubombo Ranches decided to include Poortzicht, an estate recently acquired by that company in the control scheme. About the same time an approach was made by Mr. H. Noddeboe of Tambuti and Ngonini estates with a view to establishing an effective bilharzia control scheme on both estates.

As a result by the end of the year preliminary surveys and initial mollusciciding had been carried out on the following estates:

Big Bend Sugar Estate	2,500 irrigated acres
Crooke's Plantations	1,500 " "
Bar J. Ranch	1,000 " "
Tambuti Estates	<u>1,000</u> " "
	<u>6,000</u>



Furthermore by the end of the the year the following estates had either had a preliminary snail survey completed or were awaiting completion of a survey prior to commencing treatment with Frescon.

Ngonini Estate	1,000 irrigated acres
Poortzicht Estate	2,000 " "

By the end of 1971, 15,000 acres in the Big Bend area that is, including Ubombo Ranches Sugar Estate and 1,000 acres at Tambuti Estate, near Big Bend, thereby making a total of 16,000 acres, were being treated with Frescon. An additional 3,000 acres awaited treatment. This is in contrast to the original 10,000 acres at Ubombo Ranches, which heralded the introduction of intensive Bilharzia control, in Swaziland, in 1970.

Big Bend Sugar Estate - Snail Surveys

Date	Biomphalaria	Physopsis
19.10.71	858	9
17.11.71	0	0
30.12.71	232	9

Tambuti Estate - Snail Surveys

11.71	1379,	22
7.12.71	66	42

First Treatment with Frescon, 19.11.71

Bar J. Ranch - Snail Surveys

19.9.71	342	95
22.11.71	0	7
23.12.71	63	9





CROOKS PLANTATION - SNAIL SURVEYS

16. 9.71	591	2
17.11.71	30	0
23.12.71	36	0

\*NGCINI ESTATE - SNAIL SURVEYS

8.12.71	1254	29
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\* Natural streams traversing this estate not surveyed as they were in spate.

Small pilot bilharzia control projects at the following places were continued throughout the year:

Bulandeni  
Ekutsimuleni

Lomahasha  
Phonjwana

Most of these have been in operation for a number of years. They are small and have little significance in the overall picture of the problem presented by bilharzia control. Since they are widely separated geographically they are rather time consuming, especially when one considers the volume of more significant control work, demanding the attention of our rather slender staff. Nevertheless, because they may have some local effect on the severity morbidity and possibly prevalence of bilharziasis in their areas and in view of the fact that one day they may form nuclei of larger control schemes, they probably worth maintaining.

BILHARZIA PILOT CONTROL PROJECT - BULANDENI

Date	Site	Physopsis	Shedding Cercariae
1. 2.71	Dam	6	1
"	Stream and Pool	0	0
"	Bottom Stream	0	0
"	All survey points	0	0
11. 3.71	All survey points	0	0
20. 4.71	All survey points	0	0
25.5. 71	All survey points	0	0
7. 9.71	All survey points	0	0
12.10.71	All survey points	0	0
25.11.71	* Dam	23	0
"	Stream and Pool	0	0

\* Survey after very heavy rains.

BILHARZIA PILOT CONTROL PROJECT - LOMAHASHA

Date	Site	Physopsis	Biomphalaria	Shedding Cercariae
27.1.71	Nkalashane Dam	0	1	0
"	Clinic Dam	2	0	0
"	Swamp	0	7	0
"	Police Dam	0	0	0
12.3.71	Nkalashane Dam	0	0	0
"	Clinic Dam	1	0	0
"	Swamp	2	0	0
"	Police Dam	0	0	0

21.4.71 All survey points.....



Date	Site	Physopsis	Biomphalaria	Shedding Cercariae
21.4.71	All survey points	0	0	0
26.5.71	All survey points	0	0	0
8.9.71	All survey points	0	0	0
1.12.71	All survey points	0	0	0

BILHARZIA PILOT CONTROL PROJECT - PHCNJWANA

Date	Site	Physopsis	Biomphalaria	Shedding Cercariae
2.2.71	Dam	0	0	0
"	Stream	0	0	0
"	Garden	0	0	0
"	Lr. Well	1	0	0
15.3.71	All survey points	0	0	0
22.4.71	Stream	1	0	0
"	Other survey points	0	0	0
27.5.71	Stream	2	0	0
27.5.71	Other survey points	0	0	0
2.9.71	All survey points	0	0	0
27.10.71	All survey points	0	0	0
30.11.71	All survey points	0	0	0

BILHARZIA PILOT CONTROL PROJECT - EKUTSIMULENI

Date	Site	Physopsis	Shedding Cercariae
3.2.71	Mabuti Stream	5	0
"	Shebedze Stream	0	0
"	Lomayisela Stream	7	0
"	Jaheni Stream	8	1
"	Mbijwana Stream	10	1
"	Mbijwana Dams	1	1
16.3.71	Mabuti Stream	24	2
"	Shebedze Stream	5	0
"	Lomayisela Stream	12	0
"	Jaheni Stream	5	0
"	Mbijwana Stream	14	1
"	Mbijwana Dams	0	0
27.4.71	Mabuti Stream	1	0
"	Shebedze Stream	1	1
"	Lomayisela Stream	6	0
"	Jaheni Stream	7	0
"	Mbijwana Stream	6	0
"	Mbijwana Dams	0	0
28.5.71	Mabuti Stream	1	0
"	Shebedze Stream	0	0
"	Lomayisela Stream	4	0
"	Jaheni Stream	7	0
"	Mbijwana Stream	1	0
"	Mbijwana Dams	0	0
13.9.71			All points treated No-survey.
18.10.71	Lomayisela Stream	2	0
"	Other survey points	0	0

Of the four schemes listed above, the scheme at Ekutsimuleni is the most recent and by far the largest. It was started in September, 1970. It resembles the Manzini scheme being based on focal snail control. When this is well established, it will be combined with treatment of infected children in the area. Also, as in the early days of the Manzini scheme, initially mollusciciding was only done when vector snails were found. During the year under review this

was altered.....





was altered to regular mollusciciding on a four to six week basis.

No bilharzia report would be complete without a reference to the vital importance of rural domestic water supplies. As a factor in bilharzia control, apart from establishing comprehensive control schemes on a vast scale, there is no other single factor that would at comparatively low cost, improve morbidity and lessen the severity of bilharziasis in any area, than the provision of safe domestic water supplies in endemic areas.

Finally at the end of the year what are our hopes for the coming year? Briefly it is hoped that approaches made towards the end of the year under review will result in an increase of some 42 square miles of irrigated land, being added to that currently under vector snail control.



LEPROSY

Number of Patients:	<u>1970</u>	<u>1971</u>
In residence January 1st.....	26	24
New admissions .....	20	31
Re-admissions during year .....	15	12
Discharged during year .....	34	24
Deaths .....	1	0
Non-infected children .....	3	5
Classification of New Patients:		
Lepromatous .....	11	13
Tuberculoid .....	6	18
Origin of Patients:		
Manzini .....		8
Mbabane .....		7
Mankayane .....		3
Pigg's Peak .....		5
Siteki .....		5
Hlatikulu .....		3
Average age of new admissions .....		30 $\frac{1}{2}$

Re-admissions: Ten out of the twelve were re-admitted for recurrence of ulcers and compassionate care.





CHAPTER III

GOVERNMENT AND SUBSIDISED MISSION HOSPITALS AND CLINICS:

Comparative tables for three years, setting out the staffing of Government Hospitals and the admissions, attendances, etc., at Government and Subsidised Mission Hospitals and Clinics, follows:

GOVERNMENT HOSPITALS.

	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971	'69	'70	'71	'69	'70	'71	1969	1970	1971
	Mbabane			Hlatikulu			Hankayane			Pigg's Peak			Nhlangano			TB Matsapa			Mental Matsapa			TOTALS		
Hospital Staff:																								
Physiotherapist	1	1	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
Dental Officer	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
Lab. Technician	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2
Medical Officers	8	8	8	4	5	5	-	1	1	1	1	1	-	-	-	-	-	-	-	1	1	13	16	16
Matron	1	2	2	1	1	2	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	4	5	6
Nursing Sisters	12	11	11	6	7	7	-	-	1	-	-	1	1	-	1	-	-	-	-	-	-	19	18	21
Radiographer	2	2	2	2	2	2	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	5	5	5
Senior Radiographer	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
Housekeeper	1	1	1	1	1	1	-	-	-	-	-	1	-	-	-	1	1	1	-	-	-	3	3	4
Medical Assistant	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
Lab. Assistant	1	2	2	1	1	1	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	3	4	4
Dispensers	3	3	3	2	2	2	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	6	6	6
Nurses	97	97	100	60	58	62	10	10	10	18	18	18	7	7	7	5	5	5	3	3	6	200	198	208
Ambulance Drivers	6	6	6	3	4	4	1	1	2	1	2	2	1	1	1	-	-	-	-	-	-	12	14	15
Orderlies (Hospital)	34	33	53	20	21	35	4	4	7	6	6	10	4	4	5	4	3	7	-	12	18	72	83	128
Hospital Supervisor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1

Notes: Pharmacists stationed at Central Medical Stores; Senior Radiographer covers the Territory; One Housekeeper shared by T.B. and Mental Hospitals; 3 Pupil Dispensers stationed at Central Medical Stores; Ambulance Drivers - there are two extra drivers at Central Medical Stores who can be called upon. Nurse Aides now called Hospital Orderlies. Housekeeper at Mbabane Redesignated Catering Officer.

Nurse Aides now called hospital aides. Housekeeper at Nubane redesignated catering officer.																									
BEDS:																									
(a)	Full-Paying	14	14	14	8	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	22	22	22		
(b)	Part-Paying	298	360	300	160	172	172	41	41	41	50	50	50	14	14	15	200	200	200	200	200	200	964	1038	978
ADMISSIONS:																									
(a)	Full-Paying	594	643	688	168	162	342	-	-	-	-	-	338	HOSPITAL INCLUDED IN HLATIKULU	-	-	-	-	-	-	-	717	905	1368	
(b)	Part-Paying	7771	8695	7975	4280	4753	6875	1422	1731	2138	1407	1325	1001		1076	362	224	193	189	231	371	15437	16959	19629	
DEATHS:		305	257	237	171	179	212	N/A	N/A	25	73	95	69		1	4	8	8	3	4	4	556	543	556	
OPERATIONS:																									
(a)	Major	634	699	720	228	252	254	-	-	-	-	-	-	HOSPITAL INCLUDED IN HLATIKULU	-	-	-	-	-	-	-	862	951	974	
(b)	Minor	762	1158	1567	1065	928	1438	-	-	-	70	66	-		-	-	-	-	-	-	-	1897	2152	3005	
X-RAY:																									
(a)	Examinations	8504	8708	8855	4713	5142	6113	-	-	-	750	1085	-	HOSPITAL INCLUDED IN HLATIKULU	-	-	-	-	-	-	-	13967	12955	14968	
(b)	Screening	87	521	2618	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	87	521	2618	
OUT-PATIENTS:																									
1st Attendances:																									
(a)	Full-Paying	3284	4305	2060	409	803	201	-	1050	-	-	-	98	HOSPITAL INCLUDED IN HLATIKULU	-	-	-	-	-	-	-	3693	6158	2359	
(b)	Part-Paying	22935	35590	45804	12276	11802	13007	4875	4809	7085	7376	9153	8329		11721	13804	667	-	-	-	-	48129	73075	88029	
SUB. ATTENDANCES:																									
(a)	Full-Paying	1435	2468	1008	510	35	115	-	13	-	-	-	2	HOSPITAL INCLUDED IN HLATIKULU	-	-	-	-	-	-	-	1945	2516	1125	
(b)	Part-Paying	13112	15432	19408	9874	469	9810	975	254	2856	3647	4	5337		975	15481	-	-	-	-	-	-	27608	17134	51992
GRAND TOTAL:		41366	57895	68280	23069	13109	23133	5850	6326	9941	11023	9157	13766		12696	29285	667	-	-	-	-	81975	99883	144405	





SUBSIDISED MISSIONS HOSPITALS:

	Raleigh Pitkin Memorial Hospital			Good Shepherd Hospital			T O T A L S		
	1969	1970	1971	1969	1970	1971	1969	1970	1971
BEDS:									
(a) Full-Paying	22	22	22	5	5	5	27	27	27
(b) Part-Paying	300	300	300	62	62	95	362	362	395
ADMISSIONS:									
(a) Full-Paying	515	559	501	92	111	150	607	670	651
(b) Part-Paying	4,913	4,772	4,995	1,469	2,303	2,810	6,382	7,075	7,805
DEATHS:	238	245	239	65	91	82	303	336	321
OPERATIONS:									
(a) Major	592	581	585	50	62	134	642	643	719
(b) Minor	956	897	503	210	312	495	1,166	1,209	1,003
X-RAY:									
(a) Examinations	4,579	4,020	3,230	658	452	555	5,247	4,472	3,785
(b) Screening	-	-	-	-	-	-	-	-	-
OUTPATIENTS:									
1st Attendances:									
(a) Full-Paying	2,426	3,094	2,173	588	434	393	3,014	3,528	2,566
(b) Part-Paying	11,233	16,147	7,040	6,073	10,274	7,943	17,306	26,421	14,983
Sub-attendances:									
(a) Full-Paying	2,163	1,599	2,620	272	155	96	2,435	1,754	2,716
(b) Part-Paying	10,887	10,120	23,536	4,559	1,178	1,396	15,446	11,298	24,932
GRAND TOTALS:	26,709	30,960	35,369	11,492	12,041	9,828	38,201	43,001	45,197
SUBSIDISED MISSION CLINICS:									
Mazarene Missions:									
	T O T A L S			Good Shepherd Missions		Totals	MISSION TOTALS		
Siteki	6,570	8,055	7,963	Mlaula		1,548			
Endingeni	3,204	6,363	10,336	Kalanga (St. Pauls)		566			
Figg's Peak	4,467	9,969	22,451	Ngcina		775			
Mliba	2,145	3,589	4,105	Magoba		646			
Mafutheni	1,822	2,753	2,705	Mpabayi		591			
Mokinkosi	321	2,208	3,876	Kalanga (St. Benedict)		1,358			
Malegane	2,945	6,608	10,141	Sitataweni		77			
Malinda (Manyeveni)	3,846	5,399	3,008						
Maiwane	8,432	9,068	9,420						
Mabankulu	11,066	12,013	12,374						
Malela	638	225	48						
Membelihle	1,661	3,517	5,454						
Manzana	85	-	-						
Mashewula	1,512	719	914						
Mtsculwini	1,586	1,375	2,458						
Msigaweni	1,167	2,166	1,997						
Malandela	-	522	411						
TOTAL		97,664		TOTAL		5,561	51,467	76,443	113,891

Other Catholic Missions:

Lady of Sorrows	9,462	8,469	10,681			
St. Juliana	2,850	3,187	3,476	12,312	11,656	15,666
St. Lawrence Mission	-	-	1,509			





GOVERNMENT CLINICS	TOTAL ATTENDANCES			DISTRICT TOTALS		
	1969	1970	1971	1969	1970	1971
<u>HHOHHO DISTRICT</u>						
Hhohho	11,851	12,758	15,980			
Lester	6,546	8,929	13,177			
Mhlangatane	8,997	9,710	13,594			
Nkaba	3,964	6,422	8,412			
Bulandzeni			1,745	31,358	37,849	52,258
<u>MANZINI DISTRICT</u>						
Lobamba	9,961	16,538	29,974			
Mangochoco	2,704	3,111	4,218			
Dwalile	4,388	6,429	7,313			
Luyengo	11,140	18,886	12,654			
Mhlangatsha	3,870	5,703	12,790			
Mgazini	407	773	1,314			
Endinileme	650	651	567			
Engabanezi		169	682	33,120	52,260	69,512
<u>SHISELWENI DISTRICT</u>						
Gege	7,086	9,826	19,940			
Hluti	8,968	8,574	10,343			
Lavumisa	9,693	10,384	10,576			
Mahamba	7,170	13,003	26,770			
Mhlotsheni	11,447	14,257	18,711			
Edwaleni	6,645	10,409	14,385			
New Haven	11,737	18,104	17,258			
Ntshanini			1,926			
Mathanjani			361			
J.C.I.			2,796	62,726	84,557	123,066
<u>LUBOMBO DISTRICT</u>						
Lomahasha	2,481	10,155	11,591			
Lubuli	7,209	11,361	9,688			
Sipofaneni	11,878	16,257	15,878			
St. Philips	3,721	4,022	3,340			
Sinceni		4,774	12,793			
Eboli			9,205	25,289	46,569	62,495
<u>Sidvokodvo Railway Clinic</u>						
(Manzini District)	19,272	10,359	12,148			



Chapter-IV

MEDICO-LEGAL POSTMORTEM EXAMINATIONS

The number of medico-legal postmortem examinations carried out at Government and subsidised Mission Hospitals from 1969 to 1971 were as follows:-

	<u>1969</u>	<u>1970</u>	<u>1971</u>
Mbabane Hospital	-	60	66
R.F.M. Hospital	102	93	93
Good Shepherd Hospital	-	56	58
Hlatikulu Hospital	59	45	67

ASSAULT AND RAPE EXAMINATIONS

	<u>1969</u>	<u>1970</u>	<u>1971</u>
Mbabane Hospital	-	429	475
R.F.M. Hospital	442	455	433
Hlatikulu Hospital	-	140	95
Good Shepherd Hospital	-	121	148

DRIVING UNDER THE INFLUENCE OF LIQUOR OR  
DRUG EXAMINATIONS

	<u>1969</u>	<u>1970</u>	<u>1971</u>
Mbabano Hospital	-	24	4
R.F.M. Hospital	57	43	22
Hlatikulu Hospital	5	3	-
Good Shepherd Hospital	-	6	2

All the above examinations are done at the request of the police.





C H A P T E R V

HAVELOCK MINE HOSPITAL

NUMBER OF INDIGENOUS POPULATION

(NEITHER EMPLOYEES NOR THEIR DEPENDENTS)

TREATED AT THE MINE HOSPITAL DURING 1970 & 1971

	<u>1970</u>	<u>1971</u>
Number of admissions	691	427
Number of out-patients (new cases)	1,864	1,100
Number of out-patients (re-attendances)	2,086	1,268
In-patient days	4,259	2,727
Daily number of in-patients	11.6	7.5

ANNUAL RETURN OF VACCINATIONS 1970 & 1971

		<u>1970</u>	<u>1971</u>
(a)	Primary Vaccinations :	369	350
(b)	Re-vaccinations :	486	564
(b)	Certificates issued :		
	Primary :	47	9
	Re-vaccinations :	486	564

The figures given under (a) are inclusive of those under (b).



CHAPTER VI

PRISONS MEDICAL REPORT

As in previous years, the Swaziland prisons were visited at regular intervals by a government medical officer. The more distant prisons at Big Bend and Stegi were visited twice monthly and the remainder viz: Sidwashini, Malkerns Juvenile Prison and Malkerns Young Persons' Prison, were attended at weekly intervals. In addition to the clinics the medical officer periodically carried out impromptu public health inspections of kitchens and toilets. On most occasions public health standards were found to be high although on two lamentable occasions in November this was not the case - during the year an outbreak of typhoid fever erupted at Malkerns Juvenile Prison - four patients were treated and one severely ill patient was transferred to Mbabane. At the adjacent Young Persons' Prison no cases were reported. It is noted that at the Juvenile Prison sanitary buckets are used at night and the use of the flush toilets restricted to the daylight hours - this is, presumably, to make security more effective during the night although, from the medical point of view, such a practice is questionable.

The main prison, Matsapa Prison, was visited every Monday. Towards the end of the year some complaints were lodged by a certain number of the prisoners regarding the quality of the porridge - an inspection carried out by the Health Inspector disproved these complaints. The standard of hygiene at this prison is very high and periodic visits to the kitchen, toilets etc. underlined this impression.

	<u>Total Patients seen</u>	<u>T.B. Cases</u>
Matsapa	1879	34
Matsapa Female	1114	2
Sidwashini		
Big Bend	1755	Nil
Siteki	403	Nil
Malkerns Juvenile	604	1
Malkerns Yough Persons	1232	2
SIDWASHINI PRISON		
Clinic Attendances from		
March 1971 to December 1971	5289	Nil





# CHAPTER VII

## MATSAPHA MENTAL HOSPITAL

### 1. STATISTICS:

	Male	Female	Total
In-patients present on 1.1.71 :	108	60	168
Admitted :	146	57	203
Discharged :	129	50	179
Died :	3	1	4
Discharged via Gen. Hosp.	1	2	3
Absconded :	2	0	2
In-patients present on 31.12.71:	119	64	183

### IN-PATIENT DAYS:

Male	: - 40226 days - average of 158 days per patient.
Female	: - 23648 days - average of 202 days per patient.
Total	: - 63874 days - average of 172 days per patient.

### CHRONIC PATIENTS: - in residence 12 months or over.

Male	: - 75
Female:	- 38
Total	: - 113

This represents approximately 61 per cent of all in-patients treated in the hospital at any time during the year.

The average number of in-patient days excluding chronic patients is 87.

### AGE GROUPS on 31.12.71 : - as admitted during 1971.

	Male	Female	Total
Under 17 years	3	4	7
15 to 20 "	9	6	15
21 to 30 "	98	35	133
31 to 40 "	84	33	117
41 to 50 "	28	21	49
51 to 60 "	18	11	29
Over 60 "	14	7	21

### REPORT:

There has been an increase of 15 in-patients at the end of 1971, although the intake of male patients has been lower during the year as compared with 1970.

It will be noted that there is a corresponding increase of 15 chronic patients and the hospital now has a total of 113 permanent in-patients, an increase of 15% on last year.



Most of the chronic patients are showing signs of Pellagra and other forms of toxic psychosis in too advanced a stage to benefit from psychiatric drugs and treatment and most of the time require routine nursing care only, with occasional sedation.

Of the remaining patients a considerable proportion has been admitted with signs of acute toxic psychosis - mostly a combination of avitaminosis, alcohol and dagga - and their condition improved spontaneously as a result of regulated diet and an absence of intoxicants.

Schizophrenia in all its forms, epileptic psychosis and basic mental subnormality accounted for 96 of the 203 patients admitted for treatment during the year.

#### TREATMENT:

Electro-convulsive therapy has again been extensively used in selected cases with good results.

With the Ministry's approval a new psychopharmacological drug has been introduced for trials in Swaziland by Pfizer Laboratories.

Twenty selected chronic and acute patients are taking part and the early results of treatment with this new drug are being evaluated. Results to date are very encouraging.

#### PHYSICAL CONDITION:

Three suspected cases of Typhoid have been referred for treatment to general hospitals and four cases of venereal disease diagnosed in newly admitted patients have been treated. The overall physical condition of patients is good.

The year has been free of serious incidents involving violent behaviour, but minor disagreements between patients have been reported and a few patients had to receive their threatment for short periods in isolation.

The patients diet is adequate and more variety has been added through World Food Programme rations. These rations have been well received by most patients.

#### GENERAL:

A Sick Ward accommodating six male and six female patients is nearing completion and should be operational in the early part of 1972.

It will be fully equipped to treat physically ill mental patients who previously had to be transferred for treatment to general hospitals.

A treatment unit for electro-convulsive therapy and other specialised psychiatric treatment is also expected to be completed soon, as is a new laundry building.

The Mental Hospital has been regularly visited by two Medical Officers, twice each week on the average.

It has been noted with some satisfaction that greater use of out-patient facilities is being made by patients discharged from hospital on maintenance treatment which has resulted in a lower rate of re-admission.





CHAPTER VIII

PUBLIC HEALTH INSPECTORATE

The environmental health report for the year ended 31st December, 1971 is an amalgamated report of the work done by the health inspectorate staff in the territory. Though difficulties in the staffing of certain of the country's districts were experienced the overload of work borne by the present staff enabled this division to maintain a reasonable standard of hygiene in the country generally. A great deal more, however, still remains to be done and it is hoped that through the response of the communities to the improvements of their environmental health, greater achievements are in sight. The recent inauguration of two town boards in each of the country's four districts demands additional health inspectors so as to attain an ideal public health service both in these urban areas and their respective rural areas. This would mean a compliment of eight (8) health inspectors.

The employment of five health assistants attached to the present four health inspectors has had its advantages. The ideal situation would, be sixteen health assistants, evenly allocated to the districts. The mounting of a local training course for these health assistants could then be realised without unduly disturbing the service to the rural community in particular.

1. COMMUNICABLE DISEASE CONTROL:

The incidence of communicable diseases over the period 1966 - 1971 is given below. It would be erroneous to take the figures given as absolute as there are those cases which never reach the hospitals. The hospitals were the only notifying agents and it is intended to improve on the notification arrangements of the past years. The sparse distribution of the population in the rural areas, while having its advantages in less communicability, does also have disadvantages in that the visits to cases is not always possible in view of the inadequacy of the staff.

(a) Poliomyelitis:

There were no cases of this disease reported during the year and the previous years' cases were isolated and there were no fresh cases from the areas concerned. The occurrence of this disease, however, emphasises the importance of early immunization against the disease in infants. This service is being rendered at the M.C.H. Clinics at Health Centres.

	<u>CASES</u>	<u>DEATHS</u>
1966	Nil	Nil
1967	"	"
1968	13	"
1969	7	1
1970	24	Nil
1971	Nil	"



(b) Diphtheria:

Though there were eight cases reported during the year under review the mortality rate was nil. This disease which affects infants and children mainly is not endemic in the country. Immunization done at the M.C.H. Clinics. The isolated nature of the occurrence of the disease has not warranted a mass immunisation campaign.

	<u>CASES</u>	<u>DEATHS</u>
1966	Nil	Nil
1967	"	"
1968	9	2
1969	1	Nil
1970	2	"
1971	8	"

(c) Enteric Fever:

This disease which is at present endemic in nature has occurred at varying proportions in the districts but has at no stage approached epidemic proportions. The notified cases, as shown below, though not exact owing to the fact that not all cases reach the notifying agencies, has been viewed with great concern. Preventative measures adopted have been directed at the protection of the rural water supplies and the encouragement of the erection of simple pit toilets in the rural areas. More attention has been paid to the water supplies and appreciable progress has been made in this regard.

	<u>CASES</u>	<u>DEATHS</u>
1966	239	19
1967	139	6
1968	114	9
1969	112	1
1970	314	7
1971	252	1

From the foregoing figures it will be observed that the mortality and morbidity rates over the periods 1966 - 1971 are .008% and 3.6% respectively. With the improvement of the environmental conditions (water supplies, safe disposal of refuse especially human waste) it is envisaged that these rates will be reduced.

(i) Immunization against Typhoid:

Vaccinations carried out by the public health staff in rural areas in the Shiselweni district against typhoid last year are as follows:-

<u>1st Dose</u>	<u>Second Dose</u>	<u>Third Dose</u>
1593	1070	940

There are in addition large industrial estates in the rural areas especially in the Lubombo district which operate their own medical services and immunization of the employees when there have been cases of typhoid are conducted by these private medical personnel.





2. SANITATION - WATER SUPPLIES, HOUSING FOOD IN RELATION TO DISEASE:

(a) Sewage:

The general state of sanitation in the town board areas of Nhlangano, Hlatikulu, Mankayane, Lavumisa, Pigg's Peak and Siteki was maintained at a reasonably healthy standard. In the Siteki and Nhlangano areas there is still a total of 50 houses employing the bucket system of disposal of night soil. Conversion from this unsatisfactory method to the water borne sewerage system is being gradually implemented.

With the services of the vacuum tanker available the nuisance of overflowing sewage in the four districts was considerably reduced. This lorry has had to cope with numerous requests for the lifting of sewage.

No. of Requests	<u>1970</u> 90	<u>1971</u> 106
No. of Loads Lifted	504	718

The increased demand for the vacuum tanker services from various establishments and dwellings has had a severe effect on this vehicle with the result that very often it has had to frequent the mechanical workshop. A second tanker is immediately necessary.

(b) Refuse Removal:

There has been some improvement in the refuse removal service in some of the Town Board areas as a result of the employment of township 'gangs'. The problem of suitable and adequate vehicles for this purpose has, however, had some disturbing effects as in such towns as Pigg's Peak where the vehicle has other work to perform. It is, however, hoped that refuse removal service will receive the necessary equipment for efficient operation.

(c) Rural Water Supplies:

As a main preventive measure against the spread of water-borne communicable diseases such as typhoid, a rural spring protection campaign launched in 1965 has resulted in a total of 135 protected springs + 3 village water schemes + 3 piped school water supplies.

Lubombo	:-	11		
Manzini	:-	31		
Hhohho	:-	39	+ 3 piped school water supplies	
Shiselweni	:-	51	+ 3 " village "	"

Water sampling for bacteriological testing was periodically carried out and on most occasions it was conducted in an effort to identify suspected cases of water borne diseases. In this regard water samples were taken as shown below

Hhohho	:-	25 samples
Shiselweni	:-	39 "

(d) Housing:

Problems in the high density areas especially those within the

urban areas and .....



urban areas and those bordering on urban areas continued to pose a potential public health hazard. Solution to this acute problem appears to involve a long term but positive progressive improvement to the existing unhealthy manner of living. The overcrowded conditions and the problem of providing sanitary services at such places presents a threat to the health of the people living under such squalid conditions. The socio-economic conditions which are a spur to this overcrowding and unsanitary mode of living would, perhaps, be alleviated if suitable industries could be encouraged in the resettlement areas planned.

(ii) Building Plans:

A total of 130 building plans was scrutinised by this Ministry and health comments accordingly made to the responsible authority.

(e) Pest Control:

Requests for deverminisation of houses have been received during the year under review and these were mainly for disinfestation against such household pest as fleas, bedbugs, coackroaches and rats. Disinfection at hospitals has also been undertaken by the division of Public Health as shown below:-

Disinfection Requests ..... 17

Disinfestation " .....72

(f) Food in Relation to Disease:

(i) Business Premises:

Periodic inspections in respect of business premises were carried out during the year under review. A total of 231 trading premises was inspected and these included groceries, tearooms, restaurants butcheries, bakeries, hotels, bottle stores, markets, general dealers and Food factories. Foodstuffs found to be unfit for human consumption were accordingly condemned.

Condemnation of Food Stuffs:

23 bags "Flamngo sprouts" malt

15 lbs beef

7 x 3 ozs tins Instant Coffee

8 x 7 ozs tins Baked beans

3 x 15½ ozs Baked beans

1 x 15 ozs Prima Meat balls stew

1 x 425 gms. " Wieners

1 x 340 " " Corned beef

3 x 198 " " Chopped Pork

2 x 25 " biltong

1 x 750 ml. bottle Tomango squash

1 x 340 gm bottle vegetable pickle

4 x 14½ oz. pkts. mealie-meal

57 x 500 gms. Pronutro.

(ii) Abattoirs:

The only abattoirs which are under the immediate control of

/health inspectors.....





health inspectors are in the town boards of Siteki, Nhlangano, Hlatikulu and the Town Councils of Mbabane and Manzini. Control in the town board areas of Pigg's Peak, Mankayana, and Lavumisa will only be feasible when additional qualified health inspectorate staff are employed. Satisfactory coverage of the surrounding respective rural areas could then be also introduced. This would serve to introduce meat inspection at several large commercial slaughtering centres which are at present uninspected. Abattoir figures for the areas presently under control are:-

ABATTOIR	ANIMALS SLAUGHTERED			CARCASSES PASSED			CARCASSES FROZEN			CARCASSES COOKED			CARCASSES DESTROYED		
	B.	P.	S.	B..	P.	S.	B.	P.	S.	B.	P.	S.	B.	P.	S.
NHLANGANO	639	-	127	589	-	127	-	-	-	39	-	-	11	-	-
HLATIKULU	207	6	20	202	6	20	-	-	-	3	-	-	2	-	-
SITEKI	445	17	16	442	16	16	3	-	-	-	-	-	-	1	-

B. = Bovine      P. = Pias      S. = Sheep

Of the forty five carcasses rejected forty four were infected with measles (cysticercus bovis) and one for oedema with emaciation.

A total of 108 organs were condemned for stilesia, fasciolopsis echinococcus, mastitis, nephritis, T.B., cirrhosis, abscesses.

### 3. ABATEMENT OF NUISANCE:

Arising from the inspection of premises was the need for the service of notice's in certain cases. A total of one hundred out fifty notices (150) were served and the desired results were achieved.

### 4. SEMINARS:

A number of seminars at which officers of the Ministry participated were attended. The main ones were, however, those organised by the Ministry of Local Administration for a group of chiefs at Luyengo and Nhlangano.

### 5. NATIONAL CELEBRATION EVENTS:

A total of five national celebrations took place during the year and members of the public health division of the Ministry supervised the sanitation arrangements at these celebrations. These events included the King's Birthday, the Umcwasho, and Independence Anniversary Celebrations.



## CHAPTER IX

### THE HEALTH CENTRES:

During the year 1971 the Public Health Nursing Unit operated mainly from four health centres:- three main ones and one subsidiary. They were situated at Mbabane, Manxini, and Hlatikulu and the subsidiary centre at Mankayane. From these existing centres all government clinics in Swaziland are visited by the Public Health Unit, usually once monthly. In addition to the visits to government clinics, there are other service points. Public Health Nurses visit and hold clinics at the following places - Sipocosini, Edwaleni, Sigangeni, Lozitha, Mbekelweni, Maphalaleni, Makhwanekop, Mgazini and Gebeni. We have constant requests from all over the country to extend these service points. This is flattering to the Unit and an indication that the public appreciates the quality of services rendered, but shortage of staff absolutely precludes any further extension of the Public Health Unit's services.

### DISTINGUISHED VISITORS:

Early in the year, Senator Clarence Farley and his wife paid a visit to the Mbabane Health Centre. Senator Farley is the Chairman of the Overseas Aid Committee of the States of Jersey in the Channel Islands, and played a large part in arranging for the generous donation from the people of Jersey which built the new Mbabane Health Centre. He was very pleased with high quality of the building construction and the extensive range of Public Health work which was being carried on. He intimated that there might be a further gift from Jersey to extend the present Mbabane Health Centre, and this has been confirmed from Jersey.

Dr. Hitchmanova, Anthropologist, UNITA Service Committee of Canada

Dr. Nhlakana, )

Matron E.M. Sibidla ) all from Lesotho.

and Sister Tutor G. Moeletsi,)

Miss J. McNaughton, from F.A.O., Rome Italy

Mrs. D. Amelan, International Training Centre, Haifa, Israel.

Dr. C.M. dos Santos Reis - Secretary for Health

Dr. C. de Andrade - Senior Medical Officer of Health

Dr. J.L. Ribeiro - Malariologist

The above three doctors were a team from Lourenco Marques representing the Health Services of Mocambique.

Dr. Alfred Quenum, W.H.O. Regional Director for Africa.

### HEALTH CENTRE ACTIVITIES:

1. The activities as listed in the Annual Report for 1970 continued and were expanded.

2. In addition a new service was introduced. Cancer of the Neck of the Womb is, in Swaziland, one of the most frequently occurring female cancers. In order to counter and reduce the heavy incidence of this disease, a cytological service was instituted at the three main centres. "Pap" smears are taken from many of the women who attend the clinic and are examined for the possible occurrence of cancer cells. This service is as yet in its infancy but shows signs of being successful.







3. During the year supervisory visits were made more frequently to the rural clinics. It was hoped to visit each clinic once a month but the average turned out to be eight visits each year.

At Hlatikulu and Mankayane the health centre staff continued to work under very unfavourable conditions of accommodation.

#### TRAINING:

During the year a refresher course for clinic nurses was mounted at the Mbabane Health Centre. As usual it was sponsored by UNICEF. Eight clinic nurses attended and the course lasted from 22nd February to 23rd April, 1971 - a total of nine weeks. The emphasis of this course was changed from a preponderance of formal lectures to a practical in-service training with a few lectures and demonstrations. Visits were paid to factories at Matsapa and sewage disposal works and water purification plants etc. The new emphasis on the practical side of these courses was obviously successful and will be continued. Subsequent follow-up with the nurses who attended the course indicates that they all benefited considerably from their refresher course.

#### HEALTH EDUCATION:

The continued shortage of staff made it difficult to allocate public health nurses to health education duties continuously throughout the year. The health education staff was constantly required to take part in the other activities of the health centres and so, were diverted from their prime purpose of education of the public. However, in spite of these difficulties a great deal of health education activity took place during the year.

Group talks were given at all Mother and Child Health Sessions in both the main and sub-centres. The theme at the Public Health Unit Stand at the Swaziland Show at Manzini was "Good Food" and the display of posters and photographs and foodstuffs attracted great attention from the public. The "Bean Soup" demonstration proved very popular and the staff was kept busy distributing samples and recipes.

At all the static government clinics the theme of health talks was "The Importance of Immunization". The staff continued to give Radio talks and arrange film shows. Throughout the year, the various health talks at clinics and elsewhere attracted attendances of 6318 women and 687 men.

#### ATTENDANCES AND RE-ATTENDANCES AT THE VARIOUS POINTS OF SERVICE OF THE PUBLIC HEALTH NURSING SERVICE

1966	-	16509
1967	-	18171
1968	-	36265
1969	-	30203
1970	-	60391
1971	-	102921

As can be seen from the above figures attendances have more than trebled since 1969. The figures speak for themselves.

Staff nurse Dorothy Mbelu returned from a Health Visitor's Course at Aberdeen in Scotland having completed her studies with distinction.



Sister Maggie Makhubu represented Swaziland at a Seminar in Brazzaville on 'Auxiliary Health Personnel'.

Senior Health Inspector C.D. Nxumalo was awarded a W.H.O. Fellowship to study the administration of Public Health services in several African countries; - Kenya, Nigeria, and Ghana.

Senior Health Inspector C.D. Nxumalo represented Swaziland at a W.H.O. Conference in Brazzaville on the subject of 'Community Water Supplies'.

Health Inspector Leslie Mtetwa attended a course at the Training Centre in Lagos on 'Environmental Health and Communicable Disease'.

Matron Aylline Dlamini represented the Ministry of Health and accompanied the Minister of Health who represented Swaziland at the E.C.A. African Population Conference in December 1971 at Accra, Ghana.

PROMOTIONS:

Nursing Sister Aylline Dlamini was promoted to Matron.  
Staff Nurse Maggie Makhubu was promoted to Nursing Sister.





PUBLIC HEALTH UNIT

TOTAL ATTENDANCES FOR THE YEAR 1971

GRAND TOTAL 1971		
	A.N.C	New Cases
	C.W.	Attendances
	P.S.	New Cases
		Attendances
		Scholarship Medical Examinations
		Yellow Fever
	CHO- LERA	1st Dose
		Subsequent Dose
	T.A.B	1st Dose
		Subsequent Dose
	SMALL POX	0 - 4 Years
		5 - 14 Years
		15 <sup>+</sup> Years
		Others
		TOTAL ATTENDANCES
	J.P.T.	1st Dose
		2nd Dose
		3rd Dose
		Booster
	POLIO	1st Dose
		2nd Dose
		3rd Dose
	VACCINATIONS	Booster
		B.C.G.
		MEASLES
		TETANUS
		Anaemia Unqualified
		Malnutrition Unqualified
		KWASHIORKOR
		SYPHILIS
		GONORRHOEA

JANUARY  
TO  
DECEMBER

3,736

13,524

3,056

27,377

4,396

25,415

191

535

3,560

1,015

1,616

1,240

2,243

1,360

7,243

6,414

102,921

2,447

1,545

1,287

33

3,577

3,153

2,506

2

1,879

139

24

23

81

32

29

4



PUBLIC HEALTH (Contd.)

MISSION HOSPITALS

I Raleigh Fitkin Hospital:

Antenatal and Obstetrics:

	<u>1970</u>	<u>1971</u>
Antenatal attendances:		
Hospital.....	2,725	2,836
Health Centres.....	<u>3,610</u>	<u>5,456</u>
Total.....	6,335	8,292
Deliveries: Hospital.....	1,170	1,120
District.....	82	Transport not available.
Health Centres.....	<u>553</u>	<u>527</u>
Total.....	1,805	1,647

Patient Analysis in Hospital:

Born before arrival or enroute	8	14
Stillbirths.....	93	26
Multiple births: twins.....	8	13
triplets.....	3	1
Instrumental: Vacuum Ext. ..	32	19
Forceps .....	27	7
Maternal deaths.....	3	0
Toxaemias .....	30	0
Caesarean sections .....	97	102

Child Welfare:

Hospital .....	6,042	13,299
Health Centres.....	<u>27,042</u>	<u>50,043</u>
Total.....	33,084	63,342

II Good Shepherd Hospital:

Child Welfare Clinic's

Antenatal Attendances:

		P.H.C. KALANGA, ST. PAUL'S:	510
G.S.H. Clinic:	973 973	KALANGA, ST. BEN.	1179
Out Clinic Mlaula:	364 364	NGCINA:	712
P.H.C. Kalanga, ST PAUL	56	MAGOMBA	540
Ka Kalanga, ST. BEN.	179	MPABAYI	520
NGCINA:	63	SITATAWENI	64
MAGOMBA:	106		
MPABAYI:	71		
SITATAWENI:	10		





IMMUNISATIONS:

G.S.H. CLINIC:	Smallpox	313
	Measles	134
	B.C.G.	50
	Polio	95
	Cholera	344
	D.P.T.	113

OUTCLINIC MLAULA: No

P.B.H. KALANGA, ST PAUL	Smallpox	26
	B.C.G.	46
	Polio	60

KALANGA, ST.B.	Smallpox	-
	B.C.G.	50
	Polio	-

NGCINA:	Smallpox	70
	B.C.G.	70

MAGOMBA:	Smallpox	20
	B.C.G.	65

MPABAYI:	Smallpox	20
	B.C.G.	59

SITATAWENI:	Smallpox	-
	B.C.G.	-



## C H A P T E R X

### LABORATORY SERVICES

#### Laboratory Services:

Four Laboratories. The Central Public Health Laboratory. This laboratory acts as a training laboratory for laboratory assistants and also as reference laboratory plus parent laboratory for supplies, equipment, solutions etc. Mbabane Hospital Laboratory, Hlatikulu Hospital Laboratory, Pigg's Peak Laboratory.

#### Central Public Health Laboratory:

During the current year Mr. M.A. Witcomb. F.I.M.L.T. joined the service as Mr. Cotton's (W.H.O.) counterpart for the Swaziland Government. Plans for the establishment of a cytological diagnostic unit have been put into operation and to date 198 specimens have been examined. Two positive in situ carcinoma have been found.

Plans for the National Blood Bank have been put into operation and building at Manzini is expected to start in January 1972 finishing at the end of February 1972 when the N.B.B. which is at present housed temporarily in Mbabane Hospital will be moved to Manzini, under the supervision of the Central Public Health Laboratory.

#### Courses:

Mr. Witcomb attended a refresher course in exfoliative cytology at the S.A.I.M.R. in June for two weeks.

Miss D. Mkhonza and Miss E. Thabede left in May to attend a two year course for the Intermediate of the Institute of Medical Laboratory Technology in Nairobi Kenya sponsored by U.N.D.P.

It is proposed to send in 1972 two laboratory assistants to Nigeria for a refresher course sponsored by W.H.O.

#### Visitors:

During the past year visits were made to the Central Laboratory by:-

Dr. A. Quenum, Regional Director W.H.O.

Dr. R. Paviot RA/T.B. (W.H.O.)

Dr. C. Cywinski, W.R. (W.H.O.)

Dr. P. Keen, of the Cancer Research Unit S.A.I.M.R.

Dr. A. Berry in charge of the Cytology Unit S.A.I.M.R.

Dr. F.G. Peers in charge International Agency of Cancer Research  
Nairobi, Kenya.

A medical team from the Ministry of Health Mozambique.

#### Hlatikulu Laboratory:

Mr. Witcomb relieved at the laboratory for two weeks and during this period expanded the type of tests and where necessary modernised some of the tests. This laboratory can now carry out tests of all types required in a hospital of this size.

#### Pigg's Peak Hospital Laboratory:

Mr. J. Dlamini attended a two weeks course in elementary chemistry under Mr. Witcomb at the Central Laboratory and routine tests on Liver function, blood sugars, blood urea, and C.S.F. can now be performed at this laboratory.





Mbabane Hospital Laboratory:

Mr. Witcomb visited the laboratory for one week to reorganise the work and check all standards. It is felt that an extra laboratory assistant should be appointed in the early future.

Mankayane Hospital:

Equipment has been reserved to set up a clinical side room at the above hospital, and as soon as suitable accommodation is available it is expected to send once or twice a week a laboratory assistant from the Central Laboratory. Additional equipment will be supplied by U.N.I.C.E.F. and is expected early in 1972.

The National Blood Transfusion Service:

The N.B.T.S. was started with equipment supplied by OXFAM. It is temporarily being housed in Mbabane Hospital.

Mr. S. Bennet of the American Peace Corps., and Miss S. Nkosi Swaziland Government have been responsible for the organisation of blood donors and 1343 units of blood have been taken to date.

Hospitals at present being supplied are Mbabane Hospital, Hlatikulu Hospital, Pigg's Peak Hospital, Raleigh Fitkin Hospital, Good Shepherd Hospital, St. Michael's Clinic, Mankayane Hospital.

A total number of 15,051 types of examinations were carried out during the year at the Central Laboratory. This total does not include Tuberculosis Bacteriology Culture.



DETAILS OF WORK

NAME OF TEST	Jan.	Feb.	March.	April.	May.	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
C.S.F. Chemistry	1				4	1	2	6	3	2	1	1	= 21
Prothrombin Time			1	1	5			3	3	2	9	2	= 26
Xylose Absorption Test						1					1		= 2
Liver Function Test	3	3	2	2			5	2	3	2	4	2	= 28
Luten	1												= 1
S.G. (Pleural Fluid)		3			2		1		1	1	1	1	= 9
Grouping							2	11	3	8			= 26
Latex Absorbing			1	1				2					= 4
Direct and Indirect V.D. Berg					1			1	1	6			= 1
Fasting Sugar					1								= 9
Glucose Lipation					2			1	1				= 3
Albumin					1		1			1	1		= 4
Brucellosis											2		= 5
Mono-Screen Test						2				1			= 2
Galactose Level						1	1						= 2
P. B. T.						2							= 2
S.G. Protein							1				1		= 7
24 Hour Protein Test Urine								4	2	2	2	1	= 7
A. S. O. Titre								1	3	1	1	1	= 5
Urine Porphyrine and Porpholinegen										1			= 1
Active - Strepto Titre										1			= 1
Bilharzia Comp. Fix. Test.									1		2	4	= 7





DETAILS OF WORK

NAME OF TEST	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
V.D.R.L.	693	634	947	918	724	1,034	792	807	765	972	848	635	= 9769
T.M.X (Widal, Weil Felix, Arbotus)	92	96	112	108	104	92	116	63	99	98	118	86	= 1234
Vi		1					15			1			= 17
Paul Burnell	3	3				1		1	2			2	= 12
Glucose					7		3	6	1	6	2	8	= 33
blood Urea	3	3	3	2	4	5	3	1	8	8	10	5	= 55
Protein A/G Ratio	1		1	1		1	2		1		3	4	= 14
Protein Electrophoresis	2		1	1		1	2		1				= 8
Uric Acid	5	4	6	7	2	5	10	3	3	4	6	4	= 59
Cholesterol		1	5	6	6	3	3		1		1	3	= 29
Ca, Na, Ka, P, Electrolytes	2		6	4	2	3	5	4	1	2	17	7	= 53
Total & Conjugated Bilirubin	5	3	10	10	10	2	5	3			3	1	= 52
Acid & Alkaline Phosphates	5	11	5	7	7	5	5	6	5		3	3	= 60
Thymol Turbidity	1												= 1
Transaminase G.O.T.	8		6	7	7	1	5	5	9		6	8	= 67
Blood Amylase	2	2		2	2	4			3	1		1	= 15
Urine Amylase and Diatase					1								= 1
R.A. Test for Rheumatoid Factor	2	1			3		1				1	1	= 9
C-Aeative Protein		1	2	2	2								= 7
Blood Chloride					1								= 1
Blood Creatinine		1				1							= 2
Body Fluids Protein and Sugar	11	7		2	10	3	5		2	5		1	= 46



DETAILS OF WORK

NAME OF TEST	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
Urine Creatinine											1	1	= 2
Rhesus Antibodies											1	1	= 2
Blood Alcohols													= 57
	840	774	1108	1082	908	1169	1035	929	923	1124	1043	786	11778









DETAILS OF WORK CARRIED IN 1971

Name of Test	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
Pregnancy Test	12	8	4	2	5	11	16	5	9	6	8	6	92
Semen Analysis	2	0	0	0	1	1	0	0	2	2	4	0	12
Smears for Cyto.	5	11	18	10	13	16	21	44	23	28	37	40	266
Smears for Lepr.	0	9	0	0	0	0	0	14	0	15	0	0	38
Smears for Mala.	0	1	0	0	0	0	0	0	0	0	0	0	1
Water Samples	17	9	13	7	11	26	30	34	15	40	43	28	273
Milk Samples	10	14	13	3	5	16	11	10	7	9	6	9	113
Fungi	0	2	1	0	0	1	0	0	0	1	1	0	6
Sputum for Asbestos Bodies													
Stool Chemistry	0	0	0	0	0	0	0	0	0	0	0	1	1
Body Fluids	4	4	4	5	5	3	6	3	6	9	8	4	61
TOTAL	440	430	410	306	428	377	420	395	309	404	479	317	3273





C H A P T E R **XI** :

Manufacturing Laboratory Central Medical Stores Matsapha

Report on production and packing activities - January 1st to December 31, 1971

<u>Manufactures</u> <u>at C.M.S.</u>	<u>Number of</u> <u>Preparations</u>	<u>Wine Bottles.</u>	<u>40 fl</u> <u>ozs.</u>	<u><math>\frac{1}{2}</math> gallon.</u>	<u>1 gallon</u>	<u>2 gallon</u>	<u>4 oz.</u>	<u>2 lb.</u>	<u>Sterile Eye and Nasal Drops.</u>	<u><math>\frac{1}{2}</math> fluid oz.</u>	<u><math>\frac{1}{4}</math> fluid oz.</u>
	478	5886	707	4044	4638	62	368	543	1268	2873	
Raw Materials Packed at CMS.		2423	287	86	18						
Total Packed 1971.		8309	994	4130	4656	62	368	543	1268	2873	

Analytical Procedures were carried out on 266 preparations.



- 73 -  
CHAPTER XII

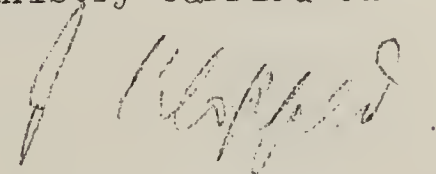
F I N A N C E

The Financial Statement of the Ministry of Health for the period 1st April 1971 to 31st March 1972 is as follows:-

<u>REVENUE</u>	1970/71	1971/72
Hospital, Health Centre & Other Fees	72828	76796
<u>EXPENDITURE</u>		
Personal Emoluments	641588	712241
Travelling Expenses	24774	24217
Office Expenses	3315	3634
Fuel, Light & Water	51200	43910
Uniforms	10791	11083
Labour	20664	41231
Running Costs of Vehicles	80888	93889
Postal Services	6172	5014
Maintenance of Patients Feeding	68111	73851
"        "        "        Drugs	197349	239708
"        "        Mental Patients	14238	10936
Medical Allowances & Fees	1910	1999
Maintenance of Hospital Equipment	4750	2885
Hospital Equipment	30273	33197
Upkeep of Grounds	819	377
Temporary Reliefs	34598	33166
Blood Transfusion Services	-	9027
Anti-Malaria Control	11623	7369
Bilharzia Control	1968	452
Laboratory Services	2863	5246
Public Health Measures	2875	2879
Staff Training	67	588
Panel of Visiting Specialists	1166	1431
Other Transport Charges	4591	8992
Vaccum Tanker Service	1080	1383
Grants to Missions	<u>112870</u>	<u>129200</u>
	<u>1330492</u>	<u>1497855</u>

CONCLUSION

I wish to express my sincere appreciation of the loyal and efficient manner in which members of the Ministry carried out their duties during the year.

  
(DR. J. Kloppe)  
CHIEF MEDICAL OFFICER.





APPENDIX I

MINISTRY OF HEALTH STAFFING  
as at 31st DECEMBER, 1971

MINISTER OF HEALTH

The Hon. Dr. A.M. Nxumalo M.H.A.

<u>POST</u>	<u>HOLDER</u>	<u>STATION</u>
Permanent Secretary	Dr. F. Friedman	Ministry of Health
Chief Medical Officer	Dr. J.M.L. Klopper	"
Specialist Medical Officers (2)	Dr. P.A. Kennedy) Dr. K.P. Mokhobo)	Hlatikulu Mbabane
Ophthalmologist (Peace Corps)	Dr. J.H. Lee	Mobile Eye Service
Surgeon ) Korean Aid Physician ) Programme	Dr. G.H. Yoo Dr. J.K. Kim	Hlatikulu "
Senior Medical Officers (3)	Dr. S.P.N. Shongwe Dr. Y. Kaplan Dr. Z.M. Dlamini (actg)	
Medical Officers (12)	Dr. M.S. King F.R.C.S. Dr. K.E. Anderson Dr. P.J. Burdon Dr. M.P. Chuene Dr. M.H. Dober Dr. W.J.L. Downing Dr. D.W. Patient Dr. E. Rwairwai Dr. G.D. Smith 3 vacant posts	Mbabane Hlatikulu Manzini Mbabane " " " Pigg's Peak Mankayane
Dental Officer	Dr. P.S.P. Dlamini	Mbabane
Senior Medical Officer of Health	Dr. G.G. Murphy	Ministry of Health
Medical Officer of Health	Dr. T.B. Behan	Manzini
Hospital Administrator (SCAAP)	K.H.P. Jenkin	Ministry of Health
Principal	D.N. Shongwe	"
Executive Officer	W.K. Bujela	"
Pharmacist/ Storekeepers (2)	G.R. Gibbon J.L. Van der Vyver	Central Medical Stores
Laboratory Technologist (3)	M.A. Witcomb G.T. Nyaoase B. Khoza	Manzini Hlatikulu Mbabane
Senior Radiographer (1)	Vacant	
Radiographers (5)	Mrs A. Kanyile	Mbabane



	Mrs. B. Dlamini	Mbabane
	Mrs. S.M. Tshabalala	"
	Mrs. H.S. Ntsele	Hlatikulu
	Mrs. G. Romanowsky (temporary)	Mbabane
Senior Health Inspector	C.D. Nxumalo	Ministry of Health
Health Inspectors (5)	E. Matolo	Siteki
	P.M. Mathews	Manzini
	L.N. Mbabama	Nhlangano
	L.L. Mtetwa	Manzini
	Vacant	
Physiotherapist	Miss A.M. Mosley	Mbabane
Physiotherapist (Peace Corps)	Miss S. Davies	Hlatikulu
Mental Hospital Supervisor	K. Kral	Matsapa
Hospital Secretaries (2)	J.L. Nyembe	Mbabane
	J. Masuku	Hlatikulu
Senior Accountant	P.O. Mbhamali	Ministry of Health
Assistant Accountant	W. Zwane	Ministry of Health
	J.M. Nkosi	Mbabane
	Vacant	
Personal Secretary Grade I (2)	Mrs. V.N. Maseko	Ministry of Health
	Vacant	
Personal Secretary Grade II (2)	Mrs. I.V. Magongo	Ministry of Health
	Vacant	
Chief Matron	Mrs. P.T. Mdiniso	"
Matrons Grade I (2)	Mrs. A.C.T. Mabuza	Hlatikulu
	Mrs. V.W.S. Mabuza	Mbabane
Matrons Grade II (5)	Mrs. G.T. Abrahams	Hlatikulu
	Mrs. N.N. Dlodlu	Mbabane
	Mrs. E. Mtetwa	Mankayane
	Mrs. M.B. Masipa	Pigg's Peak
	Mrs. A. Dlamini	Mbabane (P.H.U.)
Nursing Sisters (23)	D. Bhengu	Mbabane
	E.T. Dlamini	Hlatikulu
	F. Dlamini	"
		"
	M. Gininda	Mbabane
	A. Hlope	"
	S. Khoza	"
	J. Hlope	"
	S. Kunene	"
	A. Magagula	Pigg's Peak
	A. Mahluza	Mbabane
	M. Makhubu	Mbabane (P.H.U.)
	Josephine Mamba	Mbabane
	Joyce Mamba	"
	T. Masuku	Hlatikulu





	A. Mgulwa	Mbabane
	G.T. Nkosi	"
	E. Nxumalo	"
	I.J. Shilubane	Hlatikulu
	E. Simelane	Unpaid leave
	V. Tembe	Hlatikulu
	S.C. Tshabalala	Hlatikulu
	J. Zwane	Mbabane
	vacant	
Staff Nurses (226)	7 vacancies	
Medical Assistant	A.F.K. Phiri	Hlatikulu
Catering Officer	vacant	
Housekeepers (3)	3 in post	
Orthopaedic Technician	1 in post	
Orthopaedic Assistant	vacant	
Dental Mechanic	vacant	
Visual Aid Assistant	1 in post	
Handymen (3)	3 in post	
Accounts Officers (8)	7 "	
Clerical Officers (17)	17 "	
Storemen (4)	4 "	
Dispensers (13)	13 "	
Laboratory Assistants (10)	10 "	
Senior Microscopist	1 "	
Microscopists (6)	6 "	
Senior Health Assts (3)	3 "	
Health Assistants (27)	26 "	
Senior Ambulance Drivers	1 "	
Ambulance Drivers (14)	13 "	
Medical Attendants		
Prisons (10)	10 "	
Mental Patient Attendants (17)	17 "	
Typists (3)	3 "	
Minister's Chauffeur		
Drivers (11)	11 in post	
Senior Cooks (2)	2 in post	
Cooks (19)	19 "	
Senior Orderlies (3)	3 "	
Senior Telephonists (6)	6 "	
Telephonists (4)	4 "	



Hospital Orderlies	(153)	151	in post
Housemaids	(7)	7	"
Senior Laundresses	(1)	1	"
Laundresses	(22)	22	"
Senior Seamstress	(1)	1	"
Seamstress	(6)	6	"
Nightwatchmen	(16)	16	"
Groundsmen	(6)	6	"
Messengers	(2)	2	"
Wardmaids	(3)	3	"





APPENDIX II

RETURN OF CASES TREATED - GOVERNMENT AND MISSION HOSPITALS - 1971

Detailed List No.	Group Causes	Out- Pat- ients	In- Pat- ients	Total Cases	Deaths
001-008	T.B. Respiratory System	673	330	1003	106
010	T.B. of Meninges or C.N.S.	-	3	-	-
011	T.B. of the Intestine & Peritoneum	-	5	5	-
012-013	T.B. of Bones & Joints	-	15	15	3
014-019	T.B. - All Other Forms	10	31	41	6
020	Congenital Syphilis	128	20	148	-
021	Early Syphilis	719	10	729	-
024	Tabes Dorsalis	26	-	26	-
022-023)					
026-029)	All Other Syphilis	629	20	649	-
030-035	Gonococcal Infection	3051	21	3072	1
036-039	Other Venereal Diseases	82	6	88	-
040-041	Enteric Fever	87	347	434	3
044	Brucellosis	8	8	16	-
045	Bacillary Dysentery	275	90	365	3
046	Amoebiasis	88	132	220	7
052	Scarlet Fever Erysipelas & Septicaemia	18	13	31	-
055	Diphtheria	86	14	100	4
056	Whooping Cough	1249	262	1511	4
057	Meningococcal Infections	2	13	15	3
060	Leprosy	12	8	20	-
061	Tetanus	15	56	71	18
080-083	Poliomyelitis & Effects of Polio	20	32	52	-
084	Smallpox (Variola Minor)	-	-	-	-
085	Measles	794	551	1345	3
092	Infectious Hepatitis	54	91	145	10
104	Tick-Bite Fever	17	3	20	-
116	Malaria	24	20	44	1
123-1	Bilharzia (Vesical)	870	45	915	1
123-0	Bilharzia Intestinal	49	4	53	-
126	Tape Worm	241	10	251	-
130-0	Ascariasis	1408	30	1438	-
130-1 ))	Other Helminthic Diseases				
124-128)	& Hydatid Disease	84	9	93	-
049	Poisoning - Food	18	50	68	1
087	Chicken Pox	194	21	215	-
131	Dermatophytosis	141	7	148	-
135	Scabies	175	25	200	-
137-138	Other Infective and Para- sitic Diseases	105	7	112	-
140-150	Malignant Neoplasms of (a) Mouth, Pharynx, Oesophagus	23	27	50	5
151-154	(b) Stomach, Intestine, Rectum	1	15	16	6
161-163	(c) Larynx, Trachea, Lung	3	9	12	4
170	(d) Breast	33	19	52	-
171	(e) Cervix Uteri	4	38	42	5
172	(f) Body of Uterus	1	3	4	-
177	(g) Prostate	3	6	9	1



Detailed List No.		Out- Pat- ients	In- Pat- ients	Total Cases	Deaths
191-9	(h) Skin	49	7	56	-
196-7	(i) Bone & Connective Tissue	-	5	5	-
199	(j) All Other Sites	3	27	30	2
204	Leukaemia	8	5	13	1
210-239	Benign Neoplasms	145	138	283	4
250-251	Non-Toxix Goitre	60	31	91	1
252	Thyrotoxicosis	8	4	12	-
260	Diabetes Mellitus	59	77	136	10
281	Pellagra	740	108	848	2
282	Scurvy	36	3	39	-
286-6	Kwashiorkor	327	281	608	35
286-5	Malnutrition unqualified	766	413	1179	47
290	Hyperchromic Anaemias	-	-	-	-
291	Hypochromic Anaemias	2	-	2	-
292-293	Anaemia, unspecified Asthma	123	49	172	4
241	Asthma	906	208	1114	-
240, 242)	Other Allergic Disorders	634	38	672	-
245 )	Other Allergic Disorders	634	38	672	-
300-309	Psychoses	33	8	41	1
310, 324)					
326 )	Psychoneuroses & Hysteria	174	109	283	-
325	Mental Deficiency	188	44	232	1
330-334	Vascular Lesions of C.N.S.	11	18	29	3
340	Meningitis (Non-Mening ococcal)	77	50	127	8
353	Epilepsy	230	133	363	1
370-379	Inflammatory Diseases of Eye	1543	107	1650	-
385	Cataract	89	73	162	-
387	Glaucoma	1	6	7	-
390	Otitis Externa	363	14	377	-
391-393	Otitis Media & Mastoiditis	1283	98	1381	-
380-384	All Other Diseases of Eye	485	101	586	-
341-344	Other Diseases of C.N.S. & Senses Organs	148	90	238	8
400-402	Rheumatic Fever	163	32	195	1
410-416	Chronic Rheumatic Heart Disease	31	40	71	2
420-422	Arterio-Sclerotic & Degenerative Heart Disease	42	72	114	15
430-434	Other Heart Diseases	181	188	369	31
440-443	Hypertension & Heart Disease	97	23	120	4
444-447	Hypertension	906	115	1021	10
150-456	Diseases of Arteries	10	26	36	1
460-468	Other Diseases of Circulatory System	195	74	269	8
470-475	Acute Upper Respiratory Tract Infections including Acute Tonsillitis	4253	495	4748	2
480-483	Influenza	2637	355	2992	-
490	Lobar Pneumonia	323	260	583	11
491	Broncho-Pneumonia	989	423	1412	28
492-493	Atypical Pneumonia	197	185	382	9
500	Acute Bronchitis	2988	215	3203	5
501-502	Bronchitis, Chronic and Unspecified	1945	168	2113	3
512	Chronic Pharyngitis & Chronic Tonsillitis	871	43	914	-
518-521	Empyema & Lung Abscess	19	41	60	2
519	Pleurisy	83	59	142	-
523	Pneumonconiosis	2	2	4	-
520-522	Other Respiratory Diseases	3803	35	3838	3
530	Dental Caries	8984	31	9015	-
531-535	All Other Diseases of teeth and Gums	1009	34	1043	1





540	Gastric Ulcer	80	33	113	1
541	Duodenal Ulcer	25	27	52	-
543	Gastritis & Duodenitis	1224	158	1382	3
550-553	Appendicitis	113	73	186	1
570	Intestinal Obstruction	4	25	29	5
560	Hernia	59	71	130	3
570-0	Gastro-Enteritis (4 weeks to 2 years)	4982	1229	6211	51
570-1	Gastro-Enteritis (over 2 years)	3319	746	4065	42
572	Chronic Enteritis & Colitis	147	40	187	2
581	Cirrhosis of Liver	82	123	205	39
584-585	Cholecystitis	37	32	69	-
536-539)					
544-573)	Other Diseases of Digestive System	3761	256	4017	8
580-582)					
583-586)					
587 )					
590	Acute Nephritis	55	63	118	2
591-594	Chronic Nephritis	23	43	66	4
600	Infections of Kidney	212	127	339	2
602-604	Calculi of Urinary System	15	12	27	-
610	Hyperplasia of Prostate	5	8	13	-
620-621	Diseases of Breast	49	22	71	-
613	Hydrocele	83	68	151	-
634	Disorders of Menstruation	2924	356	3280	2
601,603)					
605,609)	All Other Diseases of Genito-Urinary System				
611,612)					
614-617)		5629	1225	6854	7
640,641	Sepsis of Pregnancy	312	85	397	1
642	Toxaemia of Pregnancy				
643-644)	A.P.H. - Haemorrhage of Pregnancy and Childbirth	42	30	72	-
670,672)	Abortion	466	751	1217	1
650	Abortion with Sepsis	46	51	97	4
651	Infection of Skin and Subcutaneous Tissues	2169	522	2691	-
690-698	Arthritis & Spondylitis	375	143	518	-
720-727	Muscular Rheumatism and Rheumatism Unqualified	945	60	1005	-
726,727	Osteomyelitis & Periostitis	44	51	95	-
730	Ankylosis and acquired Musculoskeletal Deformity	50	107	157	-
737,745)	All Other Disease of the Skin	1835	117	1952	2
749 )					
700-714	All Other Diseases of Musculoskeletal system	230	48	278	-
731-736	Congenital Malformations	45	40	85	6
750-759	Birth Injuries	7	6	13	6
760-762	Ophthalmia Neonatorum	17	13	30	-
765	Haemolytic Disease (Neo Natal)	1	1	2	-
770	Other Diseases-Early Infancy	199	80	279	37
773-776	Senility	27	17	44	4
791	P.U.O.	580	238	818	4
788-9					
788-1)					
788-7)					
788-9)	All other Ill-Defined Causes of Morbidity	7276	3605	10781	90
789-792)					
TOTAL DISEASES		87133	18189	105322	786



"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONING AND VIOLENCE (EXTERNAL CAUSE).

Detailed List No.		Out- pat- ients	In- pat- ients	Total Cases	Deaths
E810-E835	Motor Vehicle Accidents	321	317	638	20
E800-E802	Other Transport Accidents	95	66	161	1
E870-E895	Accidental Poisoning	76	177	253	3
E900-E904	Accidental Falls	743	557	1300	5
E612	Accidents Caused by Machinery	317	59	376	-
E916	Accidents Caused by Fire	258	106	364	7
E917,E918	Accidents caused by Hot Substances and Corrosives	484	72	556	2
E919	Accidents Caused by Fire-arms	2	4	6	-
E910-E913 E915,E920)	All Other Accidental Causes	2750	1388	4138	14
E928,E930) E965 )					
E970-E979	Suicide and Self-Infllicted Injury	11	11	22	-
E980-E985	Assault, Homicide	1406	989	2395	21

"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONING AND VIOLENCE (NATURE OF UNJURY)

N800-N804	Fracture of Skull	38	138	176	14
N805-N809	Fracture of Spine & Trunk	34	74	108	6
N810-N829	Fracture of Limbs	897	771	1668	9
N830-N839	Dislocation	244	58	302	-
N840-N848	Sprains and Strains	695	137	832	-
N850-N856	Head Injury (excluding Fracture)	343	323	666	16
N860-N869	Internal Injury, Chest Abdomen and Pelvis	28	123	151	4
N870-N908	Laceration & Open Wounds	2648	1158	3806	2
N910-N929	Superficial Injury - Contusion	490	315	805	-
N930-N936	Foreign Body entering through Orifice	117	102	219	-
N940-N949	Burns	779	250	1029	13
N960-N979	Effects of Poison	67	255	322	8
N950-N959)	All other effects of External Causes	83	42	125	1
N980-N999)					

TOTAL OF ACCIDENTS POISONINGS AND VIOLENCE

6463 3746 10209 73





Detailed List No.		Out- pat- ients	In- pat- ients	Total Cases	Deaths
Y00	Medical Examinations, Board and Tax Exemption Examinations	3241	-	3241	-
Y02	Prophylactic Injections:				
	(a) Smallpox Vaccination	1826	-	1826	-
	(b) T.A.B.	1	-	1	-
	(c) Diphtheria, Whooping Cough and Tetanus	324	2	326	-
	(d) Tetanus	3	114	117	-
	(e) Poliomyelitis	95	-	95	-
	(f) Yellow Fever	-	134	134	-
	(g) Cholera	345	-	345	-
	(h) Others	190	-	190	-
Y06	First Ante-Natal Examinations	6685	24	6709	-
Y08	Deliveries with Compli- cation	51	621	672	18
	Attendants admitted as In-Patients with sick children	1567	2081	3648	-
	Normal Deliveries	14	4542	4556	-
TOTAL EXAMINATIONS AND INJECTIONS		14342	7518	21860	18

SUBSEQUENT ATTENDANCES:

	Subsequent attendances excluding ante-Natal	79963	-	79963	-
	Subsequent ante-Natal attendances	1702	-	1702	-
TOTAL SUBSEQUENT ATTENDANCES		81665	-	81665	-

